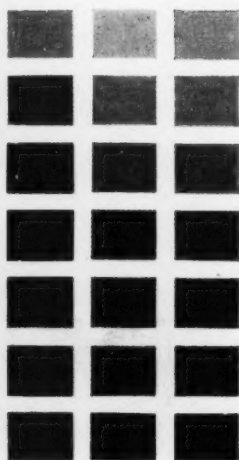
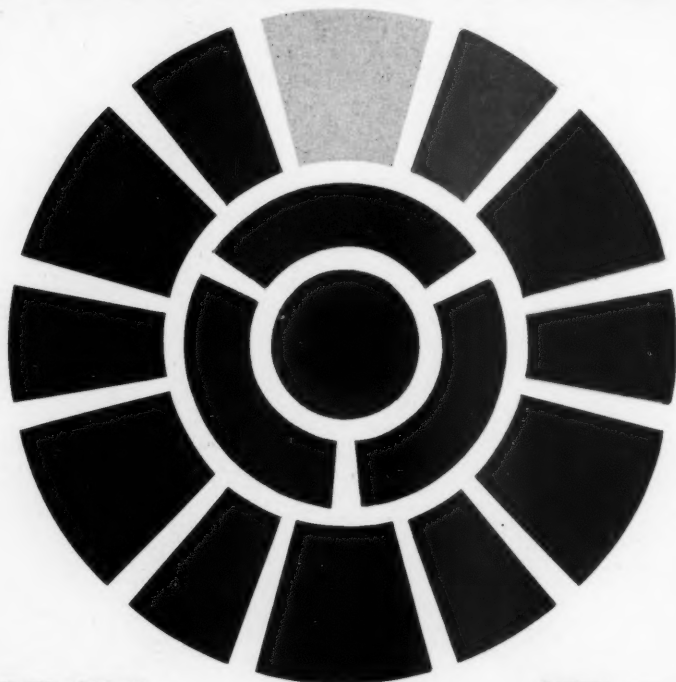


MINICAM

PHOTOGRAPH

FEBRUARY

How to Make Key Pictures — \$200 CASH

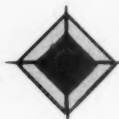


VALUES

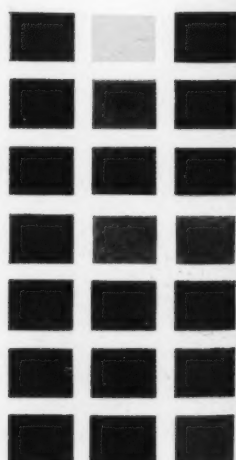
COLOR WHEEL



4



5



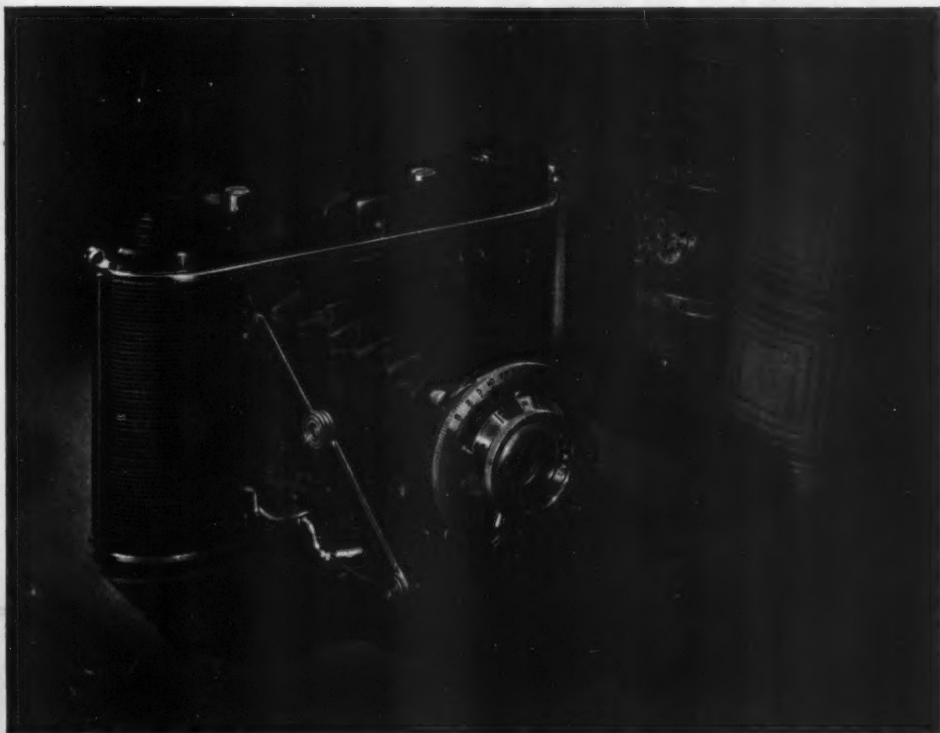
INTENSITY

Color is life! With yellow, the brightest of colors at the top, the outer circle of the COLOR WHEEL shows the primary and secondary colors. Each color wedge is opposite its complementary color. The middle wheel shows the tertiary colors. The hub of the wheel is black for the absence of color.

The rectangles (1, 2 and 3) illustrate the effect of gray, black, and white on the primary and secondary colors. Looking at the red, for example, the gray background in

(1) tends to dull the red, and the black background (2) to brighten the red as compared with the effect of the white background (3).

Squares (4) and (5) illustrate the psychological effect of bringing various colors next to each other. "Intensity" measures a color's brilliancy. "Value" measures the lightness or darkness of a color. See the article in this issue by H. Crowell Pepper, "What Is Color?"



**We invite you to examine the Agfa Speedex
— 1940's outstanding camera value — only \$27.50**

OF recent American-made cameras, we believe none is a better value than Agfa's new Speedex. It is a compact, precision-built folding camera, thoroughly modern in construction, design, and picture-taking efficiency. Yet it sells for the remarkably low price of \$27.50!

Ask your camera dealer to show you the Agfa Speedex and examine these features:

1. 100% precision-built and made in America.
2. Fully corrected f4.5 Anastigmat lens, focusing from $3\frac{1}{2}$ feet to infinity.
3. Precision shutter giving speeds $\frac{1}{2}$ to $\frac{1}{250}$ second and time and bulb.
4. Twelve $2\frac{1}{4} \times 2\frac{1}{4}$ " pictures per roll of B2 (same size as 120) film.
5. Body shutter release with built-in cable release socket.
6. Enclosed, optical, eye-level view finder.
7. Rugged steel construction, beautiful exterior finish.
8. Recessed tripod socket centrally located on camera body.
9. Neckcord and built-in eyelets standard equipment.
10. Single film window "peephole" centrally located on back of camera.
11. New type self-erecting platform and front with precision action.
12. Available accessories include eveready leather case and yellow filter.

AGFA ANSCO
BINGHAMTON, NEW YORK
MADE IN U.S.A.



MINICAM

THE MINIATURE CAMERA MONTHLY • FOR EVERY CAMERA USER

EDITED BY WILL LANE, A. R. P. S.



Not Faked

Sirs:

If the "Human Fountain" is not faked (January MINICAM, page 6) what do you call this?

While visiting New York City, I could not resist taking a time exposure of the



skyline about five p.m. The lens was wide open at $f/4.5$ and the exposure was five seconds with the camera resting snugly on the window sill of a friend's apartment.

I treasured this undeveloped negative

COVER

"Snow Witches"
From Kodachrome by Henry Clay Gipson

ARTICLES

6 Rules for Picture Success.....	by Leo Nejelski	13
How I Dramatize Picture Personality	by John Hutchins, A.R.P.S.	22
How To Take Key Pictures.....	by Alexander King	28
What Is Color?.....	by H. Crowell Pepper	32
It's Not Luck.....	by Lawrence Monahan	38
Take It Slower.....	by Jacob Deschin, A.R.P.S.	42
Some Camera A B C's.....	by Walter E. Burton	51
Shooting Stars.....	by Willard Ball	56
Easy Direct Copying.....	by Walter Engstrom	60
Patterns Everywhere.....	by F. Berko	64
Blowing Them Up Big.....	by Hamlin Welling	70

5-MINUTE FEATURES

New Developer Mixing Method.....	36
Vary the Neckline.....	41
Gunning Behind the Lines.....	46
Sell the Small Fry First.....	49
Spotlights with Fluorescent.....	63
Machine Gun Camera.....	75

DEPARTMENTS

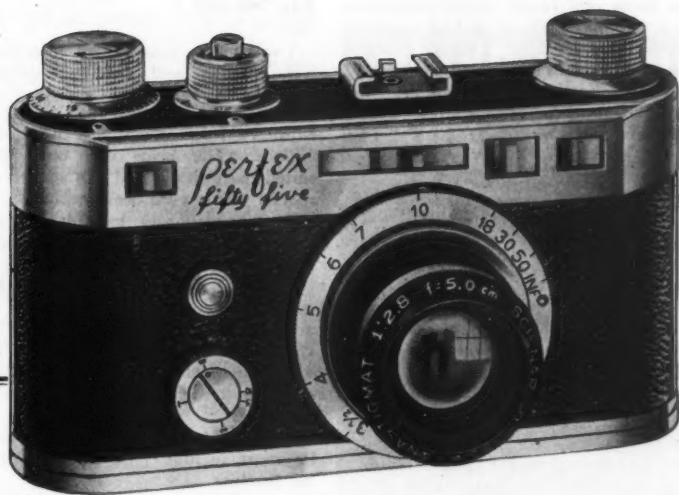
In Focus.....	4
Photo Data Clip Sheets.....	20
Story Behind the Picture.....	38
Behind the News Camera.....	74
Being Critical.....	76
Kamera Kwiz.....	78
Build It Yourself.....	80
Salons to Enter.....	84
Contest Calendar.....	86
Salons to See.....	87
Photography Trade News.....	104
Book Reviews.....	111
Questions and Answers.....	114

CINECAM

Edit Your Film.....	by William L. Morgan	115
Telephotos.....	by C. W. Gibbs, A.R.P.S.	118

MINICAM (TITLE REG. U. S. PAT. OFF.). PUBLISHED AT 22 E. 12TH ST., CINCINNATI, OHIO. MANAGING EDITOR: WILL LANE, A.R.P.S. BUSINESS MANAGER: A. M. MATHER. EDITORIAL ASSOCIATES: HENRY CLAY GIPSON, SALLY PEPPER. CONTRIBUTING EDITORS: JACOB DESCHIN, A.R.P.S.; JACK POWELL, J. SHULMAN LOOTERS, F. R. P. S. ART DIRECTOR: M. JAY SMITH. PUBLISHED MONTHLY BY THE AUTOMOBILE HURST PUBLISHING CORP. YEARLY SUBSCRIPTION, \$2.50 IN U. S. A. AND POSSESSIONS. CANADA AND COUNTRIES IN PAN-AMERICAN POSTAL UNION, \$3.00. ELSEWHERE, \$3.50. SINGLE COPIES, 25c. EASTERN ADVERTISING OFFICE: EVERETT GILBERT, 43 WEST 43RD STREET, NEW YORK CITY. TELEPHONE VA. 6-5254. WESTERN ADVERTISING OFFICE: HERMAN A. ROSENTHAL, 333 NORTH MICHIGAN AVENUE, CHICAGO, ILLINOIS. TELEPHONE FRANKLIN 7100. WEST COAST OFFICE: A. ROTHENBERG, 6851 S. BERENDO STREET, LOS ANGELES, CALIF. TELEPHONE DREXEL 2877. ENTERED AS SECOND CLASS MATTER AT CINCINNATI, OHIO, MARCH 25, 1938, UNDER THE ACT OF MARCH 3, 1879.

MADE
IN
U. S. A.



NEW
1940
MODEL

ANNOUNCING
THE NEW

*PERFLEX
Fifty-five*

35mm CANDID
CAMERA

As new as 1940—redesigned, improved and offered as the year's outstanding value in a fine precision instrument—for perfect picture making. The new Perflex fifty-five sets the pace for quality—for features—for usability. Compare it with the field—feature for feature—for convincing proof of Perflex superiority.

- COUPLED RANGE FINDER
- BUILT-IN FLASH SYNCHRONIZER
- BUILT-IN EXPOSURE METER
- FOCAL PLANE SHUTTER
- LARGE APERTURE LENSES
- PRECISION CONSTRUCTION
- LENSES INTERCHANGE
- NEW SLOW SHUTTER SPEEDS

The Outstanding "Buy" in its Price Class

Study those Perflex features. The focal plane shutter gives you a top speed of $1/1250$ th second—and through a precision gear movement, a slow of 1 second—quick and easy to set—accurate and dependable in action.

WITH F:3.5 LENS, EACH \$39.50

WITH F:2.8 LENS, EACH \$49.50

PERFLEX thirty-three

Built-in exposure meter, flash synchronizer, sharp anastigmat lenses and coupled range finder provide you with every convenience for ease and speed in operation. Your dealer will be glad to show you this new Perflex thirty-three.

\$29.50

EASTERN DISTRIBUTORS—RAYGRAM CORP., 425 4th AVENUE, NEW YORK CITY
WEST COAST DISTRIBUTORS—PARAMOUNT PHOTO SUPPLY CO., 521 SOUTH SPRING STREET, LOS ANGELES

Prices
subject
to change
without
notice

CANDID CAMERA CORP. of AMERICA

844 W. ADAMS STREET

CHICAGO, ILLINOIS

For sale
at all good
dealers

until I got home and found to my embarrassment that a photoflood snapshot had somehow been taken on the same film. Dismay changed to pleasure when friends said they thought the double exposure effectively captured the spirit of the city and of a charming New Yorker I had met there.

W. A. ATLAS.

Louisville, Ky.

"Clip and File"

Sirs:

I clip and file magazines for ready reference. The trouble with MINICAM is that there are so many valuable articles that demand permanent filing that these articles sometimes appear on opposite sides of the same pages. You ought to print on one side of each page only.

C. S. LONGMAN.

New York City.

Reader Longman is in for further temptation to clip MINICAM pages with the beginning this month of the new feature "Photo Data Clip Sheets." (See page 20). He might emulate libraries which order two copies, one for clipping and one for filing intact. Or copy of the pages by simple contact printing as described on page 60.—Ed.

Ads Tell All?

Sirs:

I've been looking for an enlarging easel that was efficient and easy to operate yet was not too expensive. When I saw a Camera Exchange's ad on page 132 of a recent MINICAM I felt it was just made to my specifications. The price was only \$6.95, which suited me exactly, and the ad described all the special features I'd been seeking.

I was preparing to order it when I discovered that one of the most important facts about it had been omitted from the ad. Nothing whatever was said about the maximum size of the paper it would handle. If it'll take nothing larger than 5x7 I can't use it. Of course I can write to them and ask about it—but there are other dealers and manufacturers who aren't so secretive, so why should I bother?

If an advertiser wants to sell me something he must include ALL the information about his product.

BRUCE COLE.

Clarinda, Iowa.

Photographing Birds

Sirs:

In December MINICAM, (p. 46-47), an article on photographing birds in winter recom-

Hollywood's Latest . . . For Better Pictures New "DINKY INKIE" Light



.. Powerful All Purpose 100-
150 Watt Spot Light
For Only \$15⁰⁰

Here at last is a powerful yet small-sized, light-weight, inexpensive, all purpose light—to high-light portrait subjects and for greater flexibility in modeling close-ups; to eliminate shadows and dark corners in indoor movies. Easy to carry and set up on your tripod; locks in any position. Operates in absolute silence. Will not heat up excessively even after hours of use. Light output will focus from an 8-degree spot to a 44-degree flood. Lever arm, protruding from both front and rear, is moved from side to side for focusing spot to flood. Numbered graduations enable duplicating a given focus position. The "DINKY-INKIE" is the "rave" of Hollywood cameramen because it supplies so many lighting needs. At only \$15.00—how can you do without it?

ASK YOUR DEALER FOR DEMONSTRATION

Distributed by Eastman Kodak Stores

Manufactured by

BARDWELL & McALISTER, INC.

7636 SANTA MONICA BLVD.

HOLLYWOOD CALIFORNIA

\$15 Ht. 7 1/4". Diam. 5 1/2"
Wt. 2 3/4 Lbs.
With 15 ft. of cord.

mends that suet be placed in a wire-mesh basket.

Speaking from many years experience and observation I do not consider it wise to use metal of any kind in connection with a bird feeder. There are much better systems. A bird's eye or tongue, on frosty days, is liable to touch the metal and freeze to it with serious consequences. . . .

There seems to be a complex among photographers that large equipment with long focus lenses is necessary for wild life pictures. For my part I never obtained first grade bird pictures until I discarded the "blunderbusses" and commenced using a small camera with short-focus lens. By far my best pictures, and I have taken thousands, have been secured with a series 11 Rolleicord.

HUGH M. HALLIDAY.

Toronto, Ont.

"Test Your Shutter"

Sirs:

I found the article "Test Your Shutter" a very interesting one. (Jan. MINICAM, p. 41.) However, there was an error, due no doubt to faulty typesetting, and should have been written thus:

Step 1. To calculate the first time, divide the distance the ball fell in feet (4 ft.) by 16. Four divided by 16 equals .25.

Step 2. Take the square root of .25. This is .5.

This means that it took the ball .5 seconds to fall four feet.

The article, otherwise, is perfectly correct.

J. L. FLEMING.

Hartsville, S. C.

Reader Fleming is right, and our thanks go to him for correcting the typographical error in the example quoted.—Ed.



"Wish she'd stop so I can focus this telephoto split-image rangefinder."

BRING OUTSIDE FUN *Indoors*



With Movies or Stills
Shown at their Brightest

ON
A



(Reg. U. S. Pat. Off.)

GLASS BEADED SCREEN

"Until I saw how much brighter my movies were on a Da-Lite Glass-Beaded Screen," a movie maker recently told us, "I never realized what a difference a good screen could make in the quality of my pictures."

Ask your dealer to show you how much brighter, sharper and clearer Da-Lite's exclusive finer glass-beaded surface makes any pictures—movies or stills. A comparison will convince you that for perfect projection you too need a Da-Lite Glass-Beaded Screen. Famous for quality for 31 years. Styles for every need. The Challenger, shown above, offering maximum convenience, is the only screen with square tubing. Write for literature!

DA-LITE SCREEN CO., Inc.
Dept. 3-M, 2723 N. Crawford, Chicago, Ill.

"Slow or Fast?"

Sirs:

I have always been under the impression that the faster the drying of a film the finer the grain, everything else to be equal. Now I have been told that miniature camera negatives should be dried slowly. Which is correct, slow or fast?

ALBERT BEYERS.

St. Joe, Mo.

Fairly rapid drying is recommended, about 20 minutes to one hour unless one of the film drying solutions is used.—Ed.

Picture Agency

Sirs:

In delightful anticipation I read through your article "Can Agencies Sell Your Pictures?" (January issue). On and on to the bitter end I went and, to my utter dismay and disappointment, I searched in vain for Harris and Ewing, 350 Madison Ave., New York City.

For well on to forty years we have been photographing national notables and events down in Washington, D. C. for distribution among leading newspapers and publications? Over the years, we must have assembled some 4 million or more negatives, in conjunction which we have gathered an extensive file of

miscellaneous stock subjects. In fact, right at this moment we are gathering photographs from all over the world, to satisfy the demand of our clientele.

Your omission of Harris and Ewing from the list of photographic news syndicates is almost akin to ignoring Tiffany in a list of quality jewelers. How could you ever have committed such a breach?

MR. KELLEHER.

Harris & Ewing Co.

Ihagee

Sirs:

Just to keep the records straight, Ihagee is not pronounced *eye-hah-gee*, as announced in the Lexicographer's Lair of your December issue.

This much mutilated word is a synthetic trade name composed of three letters of the German alphabet: I, H, G. As you know, these would be pronounced *ee-hah-gay*, and the word would have no accent, just as COD has none. Many trade names in English so put together might be treated as Ihagee is. For example, GE might be written jee-ee (Heaven forbid!).

CLAUDE SCHAFFNER.

New Haven, Conn.

"Ee-hah-gay" it is.—Ed.



H16—16mm. with Leitz Hektor, f:1.4.....\$295
H8—8mm. with Meyer Kino Plasmat, f:1.5.....\$275

Why THE BOLEX?

AN EASY QUESTION, THAT'S EASY TO ANSWER

Preference for the BOLEX is due to its professional performance, precision workmanship and its many special and exclusive features. Both the model H16 or H8 camera are built to insure fine quality pictures without any extra effort on the part of the operator.

Some of the many reasons WHY the BOLEX excels in the 16mm. and 8mm. fields are: 1. Tri-focal View-finder, that is parallax-corrected down to 18". 2. Turret head for three lenses. 3. 190° shutter; an exclusive Bolex feature. 4. AUTOMATIC THREADING. 5. Hand Crank for either forward or reverse, lap dissolves, etc. 6. Clutch permitting an entire roll to be rewound in camera if desired. 7. Single frame release. 8. Magnified critical focusing through ground glass and lens, and many other valuable features.

LIBERAL TRADE ALLOWANCE FOR YOUR PRESENT EQUIPMENT

TIME PAYMENTS MAY BE ARRANGED TO SUIT YOUR CONVENIENCE. WRITE TODAY FOR SPECIAL BOOKLET ON BOLEX CAMERA. DEPT. MIB.



HABER & FINK 16 WARREN ST., N.Y.C.
N.C. Tel. BA-7-1230

"Prize Winner"

Sirs:

This picture of our baby has won two first prizes in newspapers. She is Karen Kay Phillips—17 months old daughter of Mr. and Mrs. Gordon Phillips.



The camera was a Reflecta taken at $f/4.5$, $1/25$ th second. Two No. 2 photofloods used and one No. 1 spot light.

GORDON PHILLIPS.

Rockford, Iowa.

"Costly Flash Lesson"

Sirs:

I have just learned a rather costly lesson—never store flash bulbs in the darkroom. I was loading film when suddenly something dropped from the shelf and FLASH, the negatives were ruined.

Yes, a bulb had fallen to the floor and ignited, altho the impact did not break the glass.

WALTER ANDREWS.

Covina, Calif.

Photograph Salon Walls?

Sirs:

I have been in the habit of making snapshots at photographic exhibitions in order to create a record for myself of the pictures I like best. Using Agfa Superpan Press film and exposures from $1/25$ th of a second to 1 second with the lens wide open ($f/3.5$) I have made many prints suitable for my purposes. By leaning against a wall or pillar I find it possible to get negatives sharp enough even at 1 second exposures to make 4x5 inch enlargements.

This size is very handy for reference, for carrying in your pocket, and for bringing out during picture discussions with other fans. The small prints naturally are valuable only



NEW OMEGA C-II

DESIGNED FOR EXACTING SERVICE

This new Omega C-II (illustrated) is a beautiful enlarger—a machine you'll be proud to own. Rugged, perfectly balanced and durably finished, the Omega C-II has proved its superiority—both by efficient dark-room performance and by the quality of the prints it produces. *It keeps cool*—dyna-thermal ventilation and optically efficient illumination. *It's vibrationless*—inclined steel girder supports. *It's dust-free*—new type dustless negative carriers. *Focuses easily and accurately.* Takes all film up to $3\frac{1}{4} \times 3\frac{3}{4}$ inches. \$77.50 without lens. Slightly higher west of Rockies. Fully guaranteed.

NEW SUPER OMEGA B—\$85 without lens—has all the features of the Omega C-II, plus geometrically correct distortion control and negative focusing. Takes all film up to $2\frac{1}{4} \times 2\frac{1}{4}$ inches. Write for folder G.

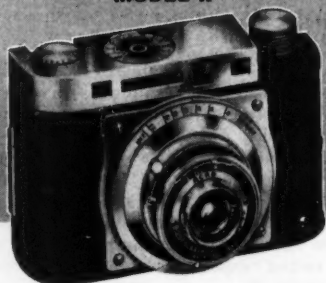
Complete line of accessories for both machines: Color-corrected lenses: Simmon, Bausch & Lomb Tessars, Dallmeyer.

SIMMON BROS., 37-06 36th St., Long Island City, N. Y.

OMEGA ENLARGERS MADE IN U. S. A.

THE NEW ACRO

MODEL R



f4.5 f3.5
\$15⁰⁰ \$18⁵⁰

Never before so much for so little. The camera that has everything. Fully guaranteed—100% American made.

BUILT-IN RANGE FINDER AND EXPOSURE METER

- Corrected anastigmat lens for perfect color or black and white shots.
- Shutter speed 1/25th to 1/200th with bulb and time stops.
- Built-in iris diaphragm from F:3.5 to F:18 for all possible variations of light.
- Hair trigger shutter release. Equipped for cable release.
- Tripod socket.
- Calibrated telescopic helix focusing mount provides accurate definition from 3 feet to infinity.
- Uses inexpensive, standard film, Eastman 127—Agfa A8, or any vest pocket size—16 exposures.

Perfect for the use of the most advanced candid camera fan—yet so simple that the amateur or beginner can take excellent pictures right from the start.

SEE IT TODAY—At your dealers! If your dealer cannot supply you—order direct. Give nearest dealer's name and address. Prompt shipment guaranteed.

DEALERS—If you do not have the new Acro in stock, wire or write. We can make immediate delivery. Send now for price lists, etc.

ACRO

ACRO SCIENTIFIC LABORATORIES

1414 SO. WABASH AVENUE • CHICAGO

for personal use and not for commercial purposes or reproduction, etc.

I always ask permission before shooting and am careful to avoid disturbing people who are looking at pictures. The other day, however, one of the salon judges refused permission, explaining that the snapping of salon prints was not desirable.

I think that those salons which do permit it ought to advertise the fact and to encourage the constructive use of copying in this manner. Several members of our camera club are thinking of doing the same thing. . . .

ALBERT N. GRAYDON.

Los Angeles, Calif.

MINICAM asked for opinions and before going to press, already had received the comments reproduced below:

Sirs:

It seems to me that such procedure would be very annoying to the people who come to see an exhibit. . . .

Aren't the photographic magazines better places to obtain these reproductions? I believe so.

LEO NEJELSKI.

Chicago, Ill.

Sirs:

I see no reason why officials of exhibits should not be agreeable to this practice nor see any harm from the exhibitors' standpoint to visitors copying their prints. . . .

I do not believe that salons could provide sufficient illumination on salon walls to make snapshots possible. It is very likely that the intense illumination would tend to wash out and destroy the subtle textures and quality of the exhibition prints to say nothing of being a strain on the eyes of visitors. . . .

I would feel that the use of flash bulbs could in no way be objectionable, especially as this would undoubtedly be the most practical and efficient means of getting the necessary exposure.

KARL A. BARLEBEN.

New York City.

Sirs:

From my own experience, I believe that practically every salon prohibits the taking of such pictures. You must also bear in mind that some people who submit prints to a salon restrict reproduction and if the salon allowed photographs to be made, they would have to have some Guardian Angel hovering about to see that the photographer took certain pictures and not others.

With reference to the advisability of allowing such practice, I am frankly very much op-

posed to it. I think it entirely unnecessary for the reason that if an amateur wants to make a file of some kind of successful Salon prints, he need not resort to this method. I myself, keep a scrapbook in which I paste photographs which have been reproduced in magazines and in Salon catalogues. I select those prints so reproduced which appeal to me personally, and anyone could use this method for building up a very interesting file of very fine reproductions.

STANLEY A. KATCHER.

New York City.

Sirs:

.....
A compromise arrangement might be reached whereby visitors were permitted to photograph pictures during certain hours, when there are the fewest visitors in the gallery.

An alternative suggestion which is already followed in some salons is that the entrants in the salon be requested to place a sales price on each print. This price could then be placed in one corner of the mount, or in the salon catalog. The committee would send the print to any purchaser at the close of the salon. The money would be collected during the salon and ten or fifteen percent would be retained by the salon committee. Since the average sales figure where this plan is attempted ranges from \$3 to \$10, the expense is not too great for the pocketbook of the average person.

Another merit to this plan lies in the fact that people would gradually be able to accumulate a collection of original photographs by some of the outstanding salon workers of this country. This would be more interesting and more valuable than copies made from the original hung on the wall.

FENWICK G. SMALL.

New York City.



"Shoot, Fritz, and quit worrying what exposure to use."

PRICES REDUCED ON ALL Rolleiflex AND Rolleicord CAMERAS!

GET YOUR ROLLEI NOW



THE AUTOMATIC
ROLLEIFLEX

NOW ONLY \$144.00

(without case)

THE original twin-lens reflex is now, more than ever before, the best buy on the whole camera market. Whether you get one of the less costly Rolleicords or the master of them all—the Automatic Rolleiflex—you can be sure that you are getting the most for your money. For all Rollei cameras are excellent values at the prices we are now able to establish. Get your Rollei now.

Here Are the New Low Prices:

- The Automatic Rolleiflex, with Zeiss Tessar f/3.5 lens and an ultra fast f/2.8 finder lens, in Compur Rapid delayed-action shutter (speeds up to 1/500), without case, now only.....\$144.00
- New Standard Rolleiflex, with Zeiss Tessar f/3.5 lens in Compur Rapid shutter, without case, now only.. 130.00
- New 4x4 cm. Rolleiflex, Zeiss Tessar f/2.8 lens, Compur Rapid shutter, without case, now only..... 127.00
- Model II Rolleicord, Zeiss Triotar f/3.5 in Compur shutter, without case, now only..... 90.00
- Model Ia Rolleicord, Zeiss Triotar f/4.5 lens in Compur shutter, without case, now only..... 67.00

Rollei cameras and accessories are sold by leading dealers everywhere. If your dealer cannot demonstrate or provide you with complete information, write us direct. Literature sent without cost or obligation. Address:

BURLEIGH BROOKS
INCORPORATED
127 WEST 42ND STREET NEW YORK

FAST ACTION

CALLS FOR
NEW G-E FLASH BULBS



Shot at 1/200th, with G-E No. 5 in concentrating reflector

Results count! And print quality . . . uniform negative density from shot after shot . . . even at high speed, are your best proof that the new G-E flash bulbs are dependable . . . give maximum performance in your synchronizer.

All this and NEW SAFETY, TOO! Because the new G-E Photoflash lamps have dye-protected safety jackets on the bulb which act like shatter-proof glass to protect you and subject. Try the new G-E flash bulbs and see for yourself!

*Insist on G-E MAZDA Photoflash lamps
. . . for "prize" pictures every time!*

GENERAL  ELECTRIC
MAZDA PHOTOFLASH LAMPS

A G-E PEAK for every need!



"How do you do it?" amateurs demand on seeing Nejelski's prints. Here is his answer



Rules for PICTURE SUCCESS

By LEO NEJELSKI

A WISE teacher warned there is danger in over-simplifying a subject, yet I am going to over-simplify what I have to say. I feel I am justified in doing this because in talks with amateurs just out of the beginner class I sense that they confuse themselves so much with details that they overlook the broad principles of photography.

With the broad principles of a subject in mind, details become much more meaningful and helpful than when they are considered haphazardly. Stated in another way, broad principles help to bring meaning and direction to a chaotic mass of details. The principles outlined here will

assist you in harnessing the details and in directing them to your purposes.

Rule 1—Know your instruments and your materials. Even at the risk of boring you by repeating what has been stated previously in this series of articles, I urge you to know your camera . . . know the film you are using . . . know your developers and your papers. Many photographers expect to make masterpieces before they know how to use their tools. This knowledge does not come without experience. Experience, in turn, can be speeded up by study and experimenting.



Rule 1. (Above) Know your instruments and your materials. Without a complete mastery of his camera and film, W. R. Bawden, England, might have missed this spontaneous picture, its beautiful, but accidental arrangement and the perfect detail in both the shadows and the sunny areas. Another instant and this picture would have been gone forever. Only a knowledge of camera, films and equipment can produce perfect negatives.

Rule 2 (Next page) Start with an idea. Robert Osborne, who made this picture, titled it "Little Immigrant," thus indicating very definitely exactly the mood and the spirit he wished to capture in the final picture. The shawl, the wistful look and the wondering expression of the child . . . all contribute to capturing the idea started with and all, in turn, contribute to the unmistakable impression conveyed to the person seeing it. Without a basic and underlying idea, this picture could never have been created. From the N. Y. Salon.

Remain keenly interested in the subject. Study. And experiment. Risk a picture now and then, particularly if you have not made one similar to it before. This experimenting also broadens your knowledge of what your camera, films,

developers and papers can do.

Without a basic knowledge of your instruments and your materials you will find yourself constantly uncertain of yourself. And when you are confronted with a hard-to-get picture you are apt to miss it.



Also, when time is a factor you may waste your opportunities if you have to worry about what the speed and aperture should be and, before you can get set for the picture, the action may be over forever.

I will never cease being grateful to the portrait photographer who gave me a chance to learn the rudiments of photography in return for such help as I could give him loading plateholders, developing plates, making proofs, prints and enlargements. That was over twenty years ago. But the details of that experience cling to me even today, and prove constantly more valuable with passing time.

Rule 2—Start with an idea. When your picture develops out of an idea you will find that such a picture will bring back vivid memories of the thoughts and emotions that coursed through your mind during the period when the picture was being planned and made. Such pictures are charged with thoughts and emotions because they imprison within them the spirit of the events as well as the cold facts.

To be sure, the main ability of the

camera is to record detail. However, details can be manipulated and selected so that they are subordinated or accentuated to emphasize the main thought in the mind of the person making the picture. Without interpretation, without an idea back of it, a picture is but a record. While record photographs are valuable when made for that purpose, even a record photograph becomes more meaningful and interesting when actuated by a mood, an idea, a thought.

Starting with an idea, one is more able to convey that same idea to others. It is the significance of pictures to others that makes them valuable.

To share your enthusiasms, fears, ambitions and gratifications with others, begin by capturing these emotions in your pictures. In the process, you may create a picture to be liked and appreciated by many people. When this happens, you can be certain deep down in your mind that you have created a great picture.

Rule 3. (Right) Look at everything as though you were seeing it for the first time. Millions of photographers would have passed this by. Yet Hans Kaden saw it and responded. Whether he thought it consciously, or not, he must have felt the drama of the struggle between the drifting sand and the bush helpless to ward off the piling up that must kill it eventually. The rhythm of the sand and the long shadows of the bush heighten the impression of the struggle. A fresh eye will discover countless such picture opportunities.

Rule 4. (Below) Be yourself. This picture, like most of those made by J. Ghislain Lootens, is strongly individual. First of all, Mr. Lootens saw a dramatic picture in a piece of fabric. He was not swayed from his conviction merely because such a picture had not been made before, except rarely. Secondly, he saw an opportunity to create a picture that is sheer design and has no deeper substance, a difficult problem. But because he dared to be himself he succeeded on both counts.



Rule 5. Simplify. This picture carries simplification to a justifiable extreme. What added detail is needed to set our own thoughts into motion and to cause us to want to exchange places with the man here on the stern-wheeler? The elimination of detail causes the eye to fasten on the man, the water wheel, the water itself and the city across it. Through the association of these elements, our minds create a story and a desire. Details would have made this picture less direct and forceful. Photo by Sid Marean, made at 7 a. m., Panatomic X, 1/25th at f/8, Rolleiflex camera, in DK-20, overdeveloped 40 per cent.



Rule 3—Look at everything as though you were seeing it for the first time. People travelling in a new country see everything excitedly and with a fresh viewpoint because they are seeing people and sights for the first time in their lives. Their enthusiasm usually is so great that they must make pictures of every phase of their new seeing.

Cultivate this habit in all your seeing. Look at everything as though you are seeing it for the first time, with fresh eagerness and enthusiasm.

Approaching every day, every trip, every picture-making experience with fresh sight, you soon will discover new beauties all about you. Everywhere you go there are hundreds of pictures. A person who creates such seeing habits in his picture-making soon discovers that the habit carries over to his daily living and brings with it added zest and enthusiasm.

Seeing freshly is a constant challenge. It will lead you to experiments that would never occur to you without this basic enthusiasm and confidence. Seeing everything as though for the first time also leads to progress. The world would become dull and uninteresting without innovators in thought and in action.

Rule 4—Be yourself. Have confidence in yourself. It is only when you make a picture that appeals to you very much that you stand a chance of making one that appeals to many people.

Imitating others leads only to an imperfect copy. Such picture-making lacks the spark that yields originality because it is neither sincere nor convincing. It also lacks the compelling fire which results only from an immediate recognition that the picture was made because the maker was motivated by a deep conviction that he could not pass it by.

Please yourself first. Only by pleasing yourself can you please and move others.

Pictures that are made out of lukewarm convictions betray their emotional content to the persons looking at them. They are lukewarm in their appeals and in their reactions.

By being yourself you have an excellent chance to capture originality in your pictures. Your own individualities, your own peculiar way of looking at things—these will appear in each picture despite all you might do to conceal them. So why not give in to them completely?

Rule 5—Simplify. Nature is chaotic. Out of this chaos you must select details with order and meaning. The easiest way to accomplish this is through simplification.

Simplification may be accomplished by selecting the proper viewpoint, or viewing point. A low perspective that tends to place the person being photographed against the sky instead of a background of confusing buildings is one means of simplification. The deliberate choice of a plain background is another way.

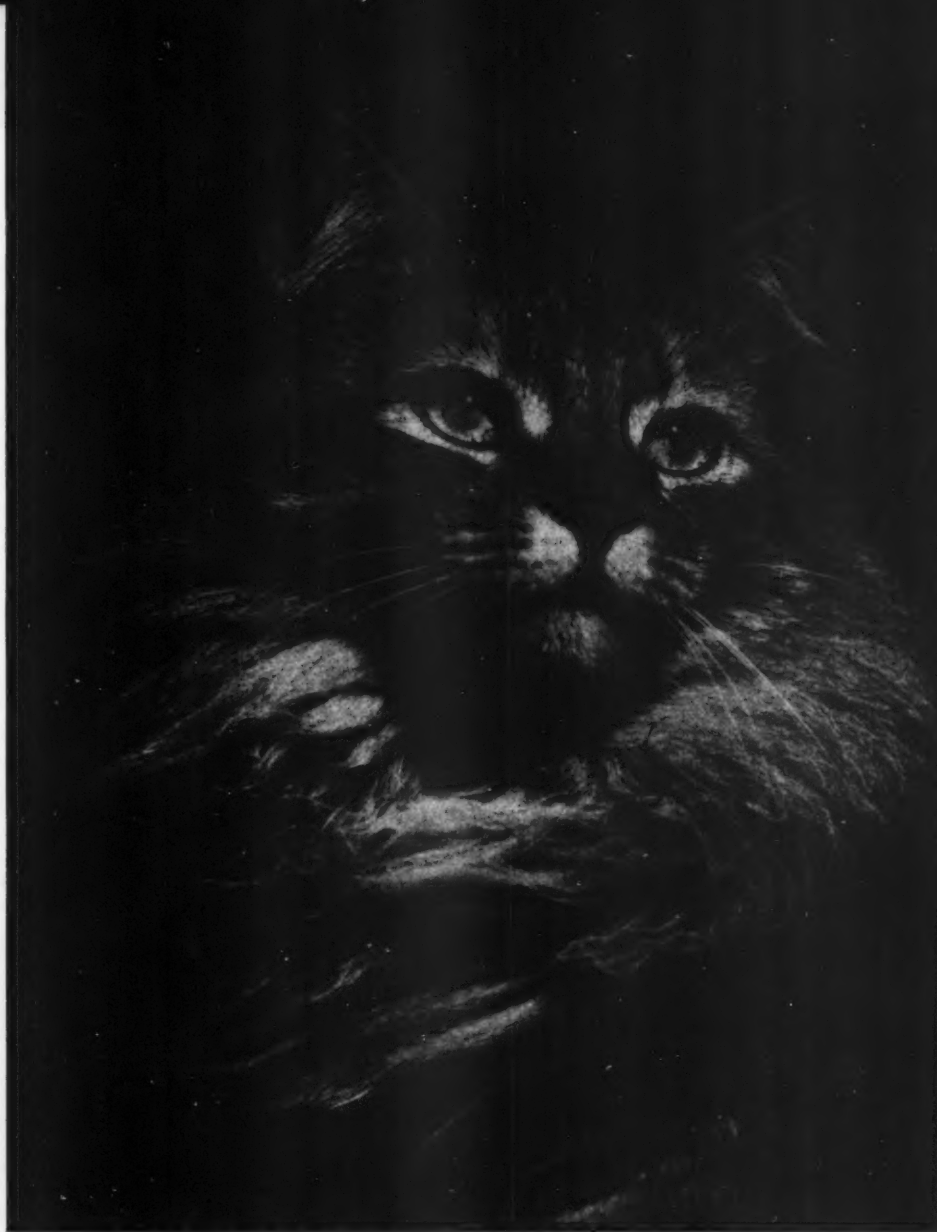
Closeups are always helpful, too. Of course, if you get too close you will distort the shape and size of the nearest objects. But do not let this worry you too much. Most people err too confusedly in the other direction.

While simplifying, try to get some pattern into the arrangement of the details in the photograph. The eye follows and understands an orderly arrangement much more easily and quickly than it does a jumbled one.

Try for simple geometrical designs at first—a cross, an L shape, a letter S, a circle, a triangle. If you are picturing a mother and her babe, have the mother look at the baby. We are all curious. We want to see what others are looking at. This leading of the eye to a point of interest automatically simplifies a picture. Try hard to simplify. You can seldom simplify too much.

Rule 6—Strive for perfection. Do not take this as free license to shoot promiscuously with the hope of getting one perfect picture. Rather, take it as encouragement to strive carefully and thoughtfully to obtain a picture that portrays exactly what you have in mind.

Speaking from personal experience again, there are times when I make only one negative. But that happens rarely and

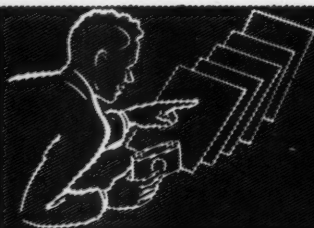


Rule 6. Strive for perfection. Thousands upon thousands of pictures have been made of cats. However, this one by John Oldermann ranks with the finest that have ever been made. It captures the majesty, the curiosity and the mystery of the species. It is far more than a record photograph of a cat. It conveys the universal qualities that apply to all cats. Without a deep desire to achieve perfection, this picture would have been of the same caliber that characterizes the thousands of cat pictures made each year.

only when I have a deep, unshaken conviction that I have captured exactly what I had striven for.

More frequently I make several nega-

tives. Each one, however, is made with care and thought. In fact, each one is made with the same care and same thought that would be (Page 99, please)



MINICAM Magazine's PHOTO DATA Clip Sheets

REDUCTION

AN over-exposed negative that is developed fully, is likely to lack contrast and be too dense for easy printing. On the other hand, an underexposed or normally-exposed negative if overdeveloped may build up too much contrast. The remedy for such conditions is reduction.

Prints that are too dark also can be reduced in the same manner.

The process of reducing a negative consists of dissolving away some of the silver image with chemicals. The reducer can be chosen so that it reduces the image uniformly, or affects mainly the highlights.

1—For reducing overexposed negatives where the need is for less density and more contrast:

FARMER'S REDUCER

Stock solution—

- (a) Water 8 oz.
Potassium ferricyanide 273 gr.
(1/2 oz., 55 gr.)
(b) Water 32 oz.
Hypo (Sodium thiosulphate) 8 oz.

To reduce a negative: Add 1 part of (a) to 4 parts of (b), and then pour 28 parts water into this. Pour the mixture quickly over the negative, to insure even action. Watch the negative closely, and when the image looks about right, remove the negative and rinse in clear water. Wash well and dry.

For overexposed, fully developed prints, use in same manner. A smaller proportion of water can be used for faster action.

2—For overdeveloped negatives, where image is to be bleached proportionally:

FARMER'S TWO-BATH REDUCER

- (a) Water 8 oz.
Potassium ferricyanide 27 gr.
(b) Water 8 oz.
Hypo (Sodium thiosulphate)
1 oz., 300 gr. (1 1/2 oz., 82 gr.)

To reduce a negative, place it in (a) for 1 to 4 minutes, then transfer to (b) for 5 minutes. Wash thoroughly and dry. Repeat if necessary. The amount of reduction with one treatment varies with the time in (a). For removing fog from a negative, use this process, but dilute (a) with an equal volume of water.

3—For negatives of contrasty subjects which have been overdeveloped:

ACID-PERSULPHATE REDUCER

Stock solution—

- Water 8 oz.
Ammonia persulphate 1/2 oz.
Sulphuric acid (concentrated C. P.) ...
11 minims (approximately 11 drops)

To use, dilute the stock solution with twice its volume of water. Immerse negative, and when reduction appears sufficient, place the negative for 5 minutes in an acid-fixing bath, and then wash and dry as usual.

Reducers, like other photographic solutions, usually work best at 65 to 75 degrees Fahrenheit.

When mixing acid solutions, always add the acid to the water slowly, with constant stirring. Do not add water to acid or it may spatter dangerously.

In above formulas and others of this series, weights are repeated in parentheses when possible, in units that make weighing with a standard darkroom scale easy.

Before and after prints from a negative treated with Farmer's reducer (Stock No. (A), 1 part; Stock No. (B), 1 part; Water 28 parts).



Cut along this line.

A NEG
pro
grade
tensificat
ing up t
silver gr
chromium
tensificat
(1)—Inc
trast.

Althou
processe
cury are
intensifie
creases
without

CH
Stock
(1) Wa
Pot

(2) Hy
When
Stock S
Stock S
Water

Immer
image h
wash 5
stain fr
Finally
develop
of sulph
must be
ficial or
thorough

REM

The o
by using
2, and
ment.

Do n
sulphite

(1)
Print from ne
mally expose
let under deve
oped negative.

(2)
(Right) Sam
negative, after
intensification
produced the
print.

INTENSIFICATION

A **NEGATIVE** that is too thin and soft to produce a satisfactory print on any grade of paper often can be saved by intensification. This process consists of building up the weak image by depositing on the silver grains some opaque material such as chromium or mercury. Two results from intensification can be controlled as required. (1)—Increased density, (2)—Increased contrast.

Although there are numerous intensification processes, those employing chromium or mercury are the most popular. The chromium intensifier is more gentle in action; it increases the general density of the negative without increasing the contrast excessively.

CHROMIUM INTENSIFICATION

Stock solutions—

- (1) Water 8 oz.
Potassium bichromate 190 gr.
($\frac{1}{4}$ oz., 80 gr.)
- (2) Hydrochloric acid... 380 minims (0.8 oz.)
Water to make..... 8 oz.
- When ready to intensify, mix—
- Stock Solution No. 1..... 1 oz.
Stock Solution No. 2..... 1 oz.
Water 6 oz.

Immerse the negative in this until the image has bleached as far as it will go. Then wash 5 or 6 minutes in water, until the yellow stain from the bichromate disappears.

Finally, place the negative in a non-staining developer that does not contain an excess of sulphite, for about 5 minutes. This step must be performed in white light, either artificial or natural. After redevelopment, wash thoroughly and dry.

REMARKS:

The degree of intensification can be varied by using more or less of Stock Solution No. 2, and by regulating the time of redevelopment.

Do not use a fine-grain developer high in sulphite for redevelopment.

Discard the bleach after use.

Be sure the negative is well fixed and washed at least 20 minutes before attempting to intensify it with chromium.

MERCURY INTENSIFICATION

This process is more vigorous in action than that involving chromium, and is capable of giving great increase in contrast and density.

Mix the following bleaching solution:

- Mercuric chloride ($HgCl_2$)..... 81 gr.
Potassium bromide 81 gr.
Water to make..... 8 oz.

Immerse the negative in this solution until the image has turned white. Then remove and wash completely. There are various baths for blackening the image. These include the following, arranged from the most active down:

- 1—Ammonia (28%) 1 oz.
Water 9 oz.
- 2—A standard developer, such as Eastman D-72
Stock 1 part, water 2 parts.
- 3—Water 8 oz.
Sodium sulphite (anhydrous)..... 1 oz.

After treatment in one of these, wash thoroughly and dry.

REMARKS:

The mercury bleach can be used over and over.

The process can be repeated for greater density.

The mercury salt is highly **POISONOUS**, and should be handled accordingly.

Intensification of any kind is generally applied to underdeveloped negatives rather than underexposed. A negative image can be treated with reducer first to decrease fog or contrast, and then intensified. Thus, with reducers and intensifiers, you can manipulate negatives to give a wide variety of contrast and density.

(1)
Print from normally exposed but underdeveloped negative.

(2)
Same negative, after intensification, produced this print.





Fig. 1. How NOT to do it. When the photographer says, "Look pleasant, please" the result is likely to be a posy, blank and stary attempt to look pretty. The blankness in this case is emphasised by the shadow over the right eye which gives the model the appearance of a black eye.

PICTURE personality can be developed.

There is one basic reason for the failure of many subjects to photograph interestingly. It is their fear of not taking a good picture.

When the lensman clicks the shutter, these subjects do not express any definite thought in their eyes. Their attention is divided between trying to forget the camera and worrying about a possible bad result.

This division of attention nearly always results in a blank, uninteresting expression.

The technique of a play director elicits the "over the footlights" expression that puts over a picture

By JOHN HUTCHINS, A. R. P. S.

Illustrated by the Author

It is not sufficient for the photographer to say, "Now relax. Forget that I am taking your picture." He must give the subject some definite thing to think about. He should, by various suggestions, bring out the expression that he has already decided, in advance, that he wishes to capture.

It is very poor psychology to advise a friend "not to worry", or tell him, "You are foolish to worry because it will not help you out of your difficulties".

The intelligent psychologist would invite his friend out to dinner and perhaps a show. In other words, he would be definitely giving his friend something else to think of.

The photographer must learn, therefore, to give his subject something tangible to think of in order to bring out the expression he wants in the finished print. Let us discuss a concrete example of this form of suggestion.

Fig. 2 is a study of Miss Judith Russell as a Venitian Scholar, about 1520. This type of picture is extremely difficult to take because the subject is looking almost directly into the camera's lens. We are able, therefore, to look directly into the eyes and if there is not a definite expression there, the picture is desired to be uninteresting. Naturally, the position of the hands and the body and a slight turning of the head to one side and also the

How I Dramatize



Fig. 2. "A Venetian Scholar, about 1520." Period pictures demand the utmost in dramatization to make the model *feel* he, or she, is the character being portrayed. Defender XF pan, $\frac{1}{2}$ second at f16.

PICTURE PERSONALITY

feather touching the side of the chin, immediately suggests reflection.

Before taking this picture, I asked myself what a scholar of that period might be doing, and suggested to Miss Russell that she take the general position that is in the picture but leave the feather resting on the book. I then lighted the picture while Miss Russell's eyes were closed and we wrote out several lines of dialogue for her to repeat just as she raised the feather to her chin with her right hand, and opened her eyes in the general direction of the camera. As near as I can remember, the lines she was actually repeating at the moment were, "I wonder if I have misspelled the last word I wrote." During the exposure, she kept repeating these words, over and over in her mind.

Every one who looks at this picture will undoubtedly interpret in his own way what she is thinking, according to what they think they see. The important thing, however, is that the expression in her eyes there is evidence of some definite thought, which apparently fits this type of picture.

In Fig. 3 I have attempted to catch the expression of a respected church deacon "caught in the act" of stealing a sniff of snuff before the services begin.

First of all, I explained the situation to St. Clair Bayfield, illustrating the general position of the hands and body. Then I focused the camera and stopped down the lens sufficiently to allow for any possible movement of the model, backward or forward. He then looked down at the snuff box and began to take a pinch of tobacco. With the bulb in my hand at the left of the camera, I arrested his attention with, "So—you're at the snuff box again—eh—Deacon?" He turned toward me and mentally repeated over and over again a line which we had decided upon in rehearsal, "Well! That's my own affair, my good man!" Naturally, I used quite a lot of light in order to employ the fast portrait exposure of one-eighth of a second.

When I light a picture of this more or less candid type, I invariably ask the model to take the position I desire and first of all, just hold that position. All of the lighting must be taken care of at this time.

Facial expressions are fleeting things. When you are looking for expression, forget the technical side of photography. Decide upon just what expression or idea you want to get in the finished picture before you turn on the Mazdas.

Perhaps you may get an occasional good

Fig. 3. "Caught In the Act," (see next page). Defender XF pan, film 1/8th second at f16.

Figs. 4 and 5. John Hutchins at work photographing St. Clair Bayfield in "Caught in the Act." Snapshots by Charlotte Becker. Rolleiflex camera, Agfa Superpan Press film, exposure f8 at 1/25th second.





"Caught in the Act"

shot by the "just sit down" and "we'll try a few shots" method. However, all of my exhibition portraits were conceived and thought out in advance.

Another thing, if you study the anatomical construction of your subjects, you will know just how to light them in advance. Don't trust to the lucky shot.

Fig. 8 is the portrait of a young man whose brightness of personality is emphasized by the slight twinkle in his eyes and the up-turning of the corners of the mouth.

I had decided *before* I took this picture to be sure and try to capture these decided attributes of his personality. This sparkle was obvious in many of his natural mannerisms. Also there was a charming ease and abandon to the way in which he used his hands and body.

First of all, he sat down and assumed the position of the pose in Fig. 8. I noticed that his pants leg was pulled up a little bit too high. However, this obvious flaw in *perfect posing* seemed to add to the natural boyishness of a charmingly unaffected personality. I decided to leave it as it was.

During the time I was lighting the subject, I asked him to keep his eyes closed. While he was sitting there with his eyes closed, I described to him an amusing scene from a motion picture in which the hero finally makes the var-

sity football squad. I told my subject to look up toward the imaginary coach of the team and repeat mentally the line, "Coach, do you really mean I'm to play with the varsity?"

Perhaps you may not find *this* expression in his eyes. You may see or imagine some other thought. I really do not care—because—I know you will find some expression and it is arrestingly interesting.

There are, undoubtedly, a few people in this world whose eyes and faces express, photographically, thoughts and ideas which they themselves do not really feel. This is true of two or three motion picture stars who have studied acting with me. They possess a peculiar innate quality in their faces which almost invariably registers interestingly. These subjects, however, are the rare exceptions.

Naturally, a keen imagination is an extremely valuable asset for any one who wishes to develop picture personality.

In a recent issue of MINICAM, we discussed the great importance of learning to study and recognize picture personality. Too many portrait photographers are completely incapable of really knowing *when* they see an interesting expression in the eyes.

If you are taking pictures of some member of your family or of friends or relatives, you should decide in advance just what attractive characteristic of their personality you wish to emphasize in your finished photograph. It may be a slight turn of the head accompanied by a quizzical lifting of the eyes.



Fig. 6. (Upper) "Et Benedicite." This picture may suggest reflection and meditation to a great many people, but it has never conveyed enough to Hutchins to warrant its being exhibited. The arrangement of the objects in the picture and the emphasis of lighting are quite interesting, but somewhat static.



Fig. 7. (Left) Another one of the pictures that just didn't click. Good ideas frequently go wrong with even the most careful workers. Lack of expression in the eyes results when the photographer fails to inspire the subject at the right moment. Nor is the model to blame. This same subject posed for "The Dauphin," a print which so far has been accepted in every salon in which it was entered.

Fig. 8.
even m
ones, d
photogr
them.
sion, thi
have be
despite
modellin
texture o
subject
Defender
or

Perh
tleman
which
while
Cert
best w
and re
problem
the pe
make u
ual as
ticular
most
recogni
ture on
isms on
"Boy, c
all righ

Fig. 8. Youthful subjects, even more than mature ones, demand that the photographer play up to them. Without expression, this picture would have been a dud, even despite the beautiful modelling, roundness and texture of the head. The subject is Billy Calahan. Defender XF pan, $\frac{1}{4}$ sec. - on at f11.



Perhaps in the case of an elderly gentleman, it is a quiet dignity and charm which you have remarked after dinner while he is smoking his cigar.

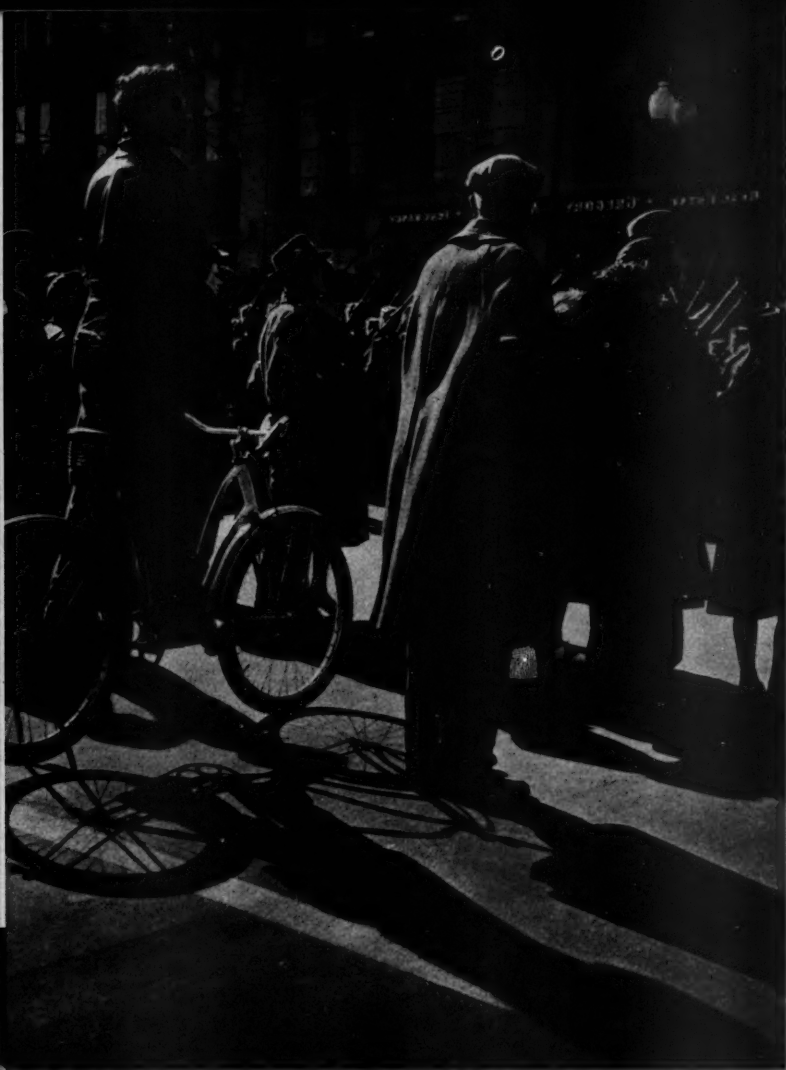
Certain individuals are really at their best when they are in a serious mood—and reflectively trying to solve a certain problem. All of these many moods are the personal mannerisms which go to make up the personality of that individual as his friends know him. Those particular mannerisms which are repeated *most frequently* will be immediately recognized by his associates. Try and capture one of these characteristic mannerisms or expressions. His friends will say, "Boy, oh, boy! That certainly is George—all right!"

Don't forget that whichever expression you attempt to get, should be an arrestingly interesting one and preferably a pleasant expression.

Sometimes it may be your ill fortune to be called upon to record for posterity on sensitized material the features of a "dyed in the wool", unmitigated stinker. During a preliminary talk with this individual, you may have been unable to discover anything more than a morose, stolid, and totally uninteresting personality.

Try and get him to talk about himself. Sometimes, some of these unpleasant birds who possess the broken down facial conformation of a London cabby will light up and exhibit a great deal of charm when they get to

(Page 91, please)



1. "I love a parade" says the song, but the reaction of Americans to marching soldiers is not the same as abroad, and this picture proves it. Exposure 1/100th at f8. Note that the negative was reversed in printing so that the grocery sign in the background appears backward. By Otto Hagel.

How to take KEY pictures

By **ALEXANDER KING**
Editorial Associate *LIFE* Magazine

**Single-
To me
contes**

IT IS
that
of
allows
ing his
picture
of any
the ch
photog

But
tion of
hinges
ing can
job and
be the
cessfull

Our
reaction
misinfo

Hol
Americ
Picture
these la
on the
ishness

Let
large c
Wherev
money
youth
from th
youthfu



Single-picture stories are in demand. To meet this challenge, see the contest announced on next page

IT IS one of the happy attributes of photo magazines that they can devote considerable space to the telling of one story. Reportage under these circumstances allows a photographer a good deal of leeway in presenting his findings. Unfortunately, most other outlets for pictures have to offer a concentrate which gives the gist of any subject in a single photograph. This is perhaps the chief reason for the generally low level of news photography.

But let us admit that even in the leisurely presentation of the picture magazines the whole story often hinges upon one or two telling photographs. A discerning cameraman understands this while he is doing his job and tries to find a single picture-synthesis which will be the key to his story. I offer a few examples which successfully demonstrate my point.

Our picture No. 1 is a more honest record of public reaction to an armed parade in America than 10,000 misinforming and biased editorials.

Hollywood undoubtedly is the gossip capital of America. Its ruling divinities are rumor and hearsay. Picture No. 2 was taken on Wilshire Blvd., and although these ladies may only be exchanging different opinions on the subject of cookery, their stance and curious rakishness somehow symbolize the fingering of good repute.

Let us take photograph No. 3, which was taken in a large city during an American Legion Convention. Wherever these middle-aged roisterers congregate, money circulates freely. In bibulous quest for their youth and forgotten glories, they attempt to wrench from the parsimonious hands of Time some glimmer of youthful carlessness and abandon. Endless are the pic-



2. (Top left) Two idle housewives gossiping on Wilshire Boulevard suggest Hollywood, and the "fingering of good repute."

3. "Welcome Legionnaires" says the window banner under the pawnshop sign to symbolize a celebration and its payoff.

4. Buyers, in their calling, examine at close hand the wearable merchandise of the coming season and the personable demonstrators of these goods.

tures of their amusing cavortings and parades, their amiable paunchiness, but only the picture I submit presents the hard reality of a final pay-off, the soberness of a morning headache and depleted pockets.

The country's buyers, like the country's traveling salesmen, enjoy perhaps undeservedly the reputation of free libidinous indulgence. Undoubtedly most of them are respectably attached to someone somewhere, but in the public mind, and in the folklore of all urban peoples, the buyer and the salesman is notoriously a devilish fellow. Nor is this entirely unreasonable. It is in the nature of his calling to examine at close hand the wearable merchandise of the coming season and he thereby automatically has easy access to the personable demonstrators of these goods.

Photograph No. 4 gives an amusing example of the hard life of the buyer, and explains perhaps the unfounded, envious little tattle to which these worthy, hard-working people are subjected. But why weary you with the obvious. Picture No. 6 is a better panorama of poverty than if it were crowded with the victims of this social condition. Picture No. 7 is an index

to a meeting.

Fig. 8 reveals one of Father Divine's followers hopefully sailing toward her imaginary heaven while her little daughter, unsustained by garbled metaphysics, rests her tired head in her mother's lap. Look at this picture carefully—it is a social document of first magnitude. Bravely accoutred in her best finery, her vague, stray wandering lines have halted for a moment like puzzled dogs along a deserted street. Roused by the cameraman from her hypnotic millennial vision, she seems full of earthly misgivings on her voyage to Paradise.

In back of her, you sense the badly rewarded years, the back-breaking labor, the terror of each tomorrow; and from a lifetime of toil she has garnered a flower for her hat, a ring for her finger, a bewildered stare and her faith. No amount of further photography could better explain or justify the extraordinary potency of Father Divine's leadership among the masses of Harlem. Great and symbolic is the sleeping child, who is bound to awaken to a future not dissimilar to her mother's past.

If it is impossible to deduce as much as

5. (Left) The camera captures the resemblance between the old sea-cook in Snug Harbor, and the squirrel that is his affectionate pet. By Otto Lindemann.

6. A "Poverty Panorama" is this characteristic scene, including tent and sewing machine.



I hav
nitely
ture.
tion w

will

1. An
me
2. Ea
ab
in
3. Th
an
fil
be
it
4. Ph
lar
or
5. Pri



7. "Index to a meeting" is the coat rack above. From these worn garments, a novelist could deduce the lives of the people and the contents of their meeting.



8. (Right) A follower of Father Divine sells hopefully towards her imaginary heaven while her little daughter, unsustained by metaphysics, rests her tired head in her mother's lap. A social document of the first magnitude.

I have from a photograph then it definitely fails in its qualification as a key picture. I make this stipulation in connection with the list of problems given here

to be solved by means of *one* photograph. The test of your ability will lie in how much of a story you can capture in one picture.

CONTEST ANNOUNCEMENT

\$200 IN CASH FOR KEY PICTURES ILLUSTRATING ANY OF THE FOLLOWING TITLES:

- | | |
|---------------------------------|-------------------------------------|
| 1) Success | 7) The joy of children |
| 2) Nervousness | 8) The discomforts of modern living |
| 3) Hope | 9) Club women |
| 4) Traffic | 10) Busy bodies |
| 5) The pleasure of country life | 11) The struggle for beauty |
| 6) Entertainment | 12) Newlyweds |

For the best key pictures submitted in this contest MINICAM Magazine will make the following awards:

Prizes: \$100 first prize; \$25 second prize; \$15 third prize; plus twelve prizes of \$5 each for each print selected.

CONTEST RULES

1. Anyone may participate in this contest and as many prints as desired may be submitted.
2. Each print must illustrate one of the subjects listed above. The test is how much of a story is told in one picture.
3. Title each print with one of the twelve titles given and tell in a hundred words or less what the print means to you. Also list technical data, camera, film, exposure, etc. used. This information should be written on the back of each print or pasted to it on a separate sheet of paper.
4. Photographs should be 4x5 inches in size or larger. Print on a smooth surface such as glossy or semi-matte.
5. Prints should preferably be UNmounted.
6. Write your name and address on the back of each print.
7. The judges will be appointed by MINICAM and their decision will be final. Every effort will be made to insure the safety of all entries, but MINICAM will not be responsible for material submitted.
8. Enclose a stamped, self-addressed envelope if return of prints is desired.
9. If prints have been reproduced in any other magazine, state publication and date.
10. Closing date: April 1, 1940.
11. Address all entries to Key Picture Contest, MINICAM Magazine, 22 East 12th Street, Cincinnati, Ohio.

is COLOR?

By H. CROWELL PEPPER

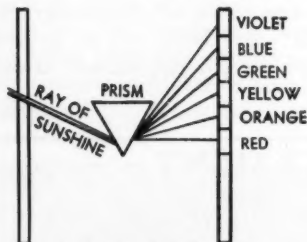
AN authority on color once remarked: "Color is Life." Whether we agree with this statement or not, there are few who would exchange the present colorful world for one in which all objects appeared to the eye as varying tones of gray. From earliest childhood we are affected by color. Scientists tell us that animals, birds and insects are likewise influenced by it. So highly developed is the sense of color in some people that they can conceive color in black and white prints. At exhibitions one may hear comments that certain etchings are "full of color." Of course no color was present but the values were so correct that the viewer's mind unconsciously supplied the color.

Color photography is not new. Since the earliest days of photography physicists and chemists have devoted their time and efforts toward the perfection of methods for the production of photographs in color. It has been more than thirty years since I made my first color prints by the three-color carbon process and by gum printing.

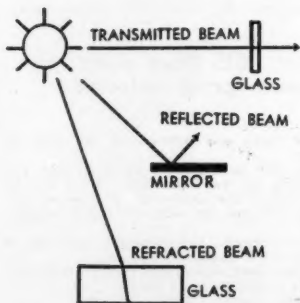
The Science of Color. There are two ways in which colors affect human beings: physiological and psychological. The first has to do with our ability to see color and the second the effect the colors have upon us.

What is Color? Color is purely an internal sensation, and has no external or objective existence. When certain light waves affect the cones or rods of the optic nerve within our eyes they are translated by the brain into color. Our brain designates these sensations by certain word-names as red, blue, yellow, green, orange, and violet. The wave length determines the color sensation. Without light there would be neither color nor visible objects. Everything we see is visible because it is luminous or illuminated.

The sun is a luminous body emitting rays of light. A ray of sunlight, though generally spoken of as white, is comprised of a series of vibrations of varying wave lengths, each of which is capable of creating a different color sensation. By means of a glass prism we may readily demonstrate this fact, breaking the ray of sunlight into a series of colors, which we term the *solar spectrum*. Broadly speaking, the solar spectrum can be divided as follows: wave lengths of 350-500 millimicrons constitute the blue-violet region; 500-600 millimicrons, the green; and 600-700, the red. The *millimicron* is the scientist's meas-



1. A ray of sunlight can be split up by a prism into six colors of the rainbow, red, orange, yellow, green, blue and violet.



2. Light may be transmitted, reflected, or refracted.

ure of
partic
nerves
into t
the ph

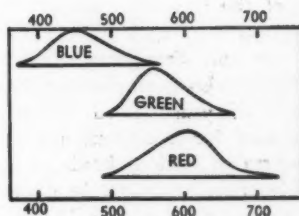
Why
colors?
ested i
flected
eras, w
sensitiv
emulsio
mitted,
objects
and of
strikes
is refle
sorbed.
determi
have le
trees in
affect u
more o
spectrum
mating
other w
lesser c

5. Light
are red
waves.
spectru
visibla
enlarge
tions of

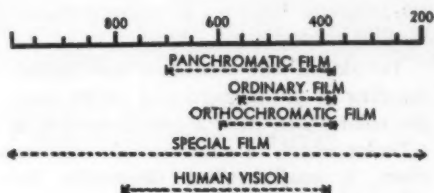
For better color pictures learn the fundamentals of color values, intensities, and harmonies. The first of a new series on the science of color.

ure of wave lengths. When light of a particular wave length reaches the optic nerves the brain translates the sensation into the corresponding color. This is the physiological side of color.

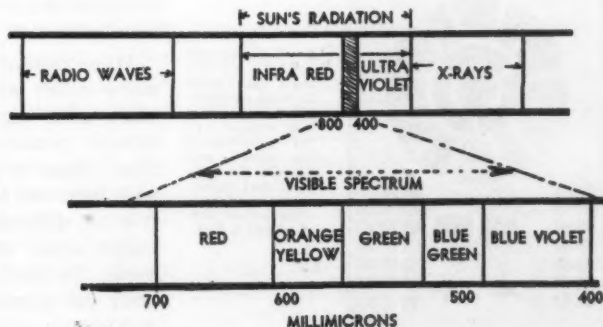
Why do objects appear of different colors? Photographically we are interested in reflected light, i.e., the light reflected by the objects before our cameras, which is focused upon our light-sensitive medium—the photographic emulsion. Light can be absorbed, transmitted, refracted, or reflected. Most objects possess the power of absorption and of reflection. When a ray of light strikes an object only a percentage of it is reflected while the balance is absorbed. The rays which are reflected determine its color. To illustrate: We have learned to consider the leaves of trees in summer as green in color. They affect us as green because they reflect more of the vibrations lying within the spectrum at wave lengths approximating 550 millimicrons. Fortunately, other wave lengths are reflected to a lesser degree and we thus secure a



3. If light has a wavelength of 400–500 millimicrons it appears blue; 500–600, it is green; and from about 600–700 it is red. If all wave lengths are present the light is yellow.



4. Color sensitivity of various films compared with the sensitivity of the human eye. Note that panchromatic film most nearly approximates the eye, while special films such as infra-red can be made sensitive to more than the eye can perceive.



5. Light is a vibration as are radio, x-ray and sound waves. The electromagnetic spectrum (upper) with the visible spectrum (lower) enlarged to show the positions of the various colors.

variety of coloring or color sensations. If the power of absorption and the power of reflection are such as to increase or decrease the wave length from what is termed spectrum green we secure yellow green or blue green.

Daylight is not constant and at different times of the day the same object presents different color sensations to our eyes. This is of the greatest importance to photographers working in color. This variation is not only dependent upon the time of day but also upon climatic conditions and time of year. Lord Kelvin devised a method for measuring the difference in spectra of various kinds of light. These differences are rated in degrees of color temperature with a "K" after them. Sunlight has a difference or range in color temperature of from 4900°K to 6500°K ; the ordinary house lighting has a temperature of approximately 2800°K . These differences in color temperature when not compensated for lead to many a failure in color photography.

To aid in our discussion and understanding of the properties of colors study the color chart, page 2, which consists of a "color wheel," a value and an intensity chart, a smaller chart illustrating the effect of a white, a gray, and a black background upon the primary and secondary colors, and two small figures illustrating the psychological effect of colors.

Yellow is the brightest of colors and in the color wheel is located at the top. Midway between yellow and blue is green, a

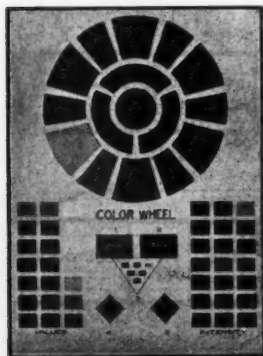
secondary color. To the right of yellow we find orange, another secondary. The darkest color (violet) is the third secondary lying midway between red and blue. If this chart were viewed under a sodium light and the colors rendered as grays, we would find a series of gray tones in which the yellow would be almost white, the intermediate yellow-orange and yellow-green slightly darker but of the same relative value, and so on down each side of the wheel, with the violet the deepest shade.

Within the outer color-circle we find the tertiary colors made from mixtures of pairs of secondary colors. Next we find a gray made from a mixture of white and black and in the center black.

In the lower left-hand portion is a value chart. In the left-hand and middle columns are placed green and orange in their full intensities in their proper positions as shown on the color wheel, while in the third column violet, the darkest color, is likewise properly placed. Green and orange to be reduced to the value of the violet require the addition of black; to bring violet up to the color intensity of green and orange it is necessary to add white. The lower right-hand section of the chart gives a fairly accurate picture of color intensity.

Every reader should prepare a similar chart and photograph it under varying light conditions. From this much can be learned of the limitations of the particular color medium being used, how the colors are affected by lights of different color temperatures, and a world of information about exposure.

When dealing solely with light, the primary colors are blue, green, and red; when using pigments or dyes, the colors termed primaries are red, yellow, and blue. Since in photography we deal first with light and later with pigments or dyes it is not difficult to see the confusion that might arise unless this explanation is made. In the following discussion I shall treat the primary colors as red, yellow, and blue.



4. A photograph of the color chart (see page 2) made on color blind film. Note that violet (at the bottom of the wheel) and blue (to the left), both dark colors, appear light while yellow (top of wheel) is dark.

We
mentar
wheel
comple
of oran
Take th
Orange
yellow
blue; t
orange.
mixed
is the
yellow.
All co
speak o
term h
the dom
ject is
artists,
tions in



7. The blue of the sea, the light blue of the sky, and the deep blue of distant objects make this subject a MONOCHROMATIC harmony. Leica camera, Finopan film, f4.5, 1/200th second. "The Following Wave," by Richard A. Heald from Fifth Rochester International Salon.

We often hear the expression *complementary colors*. A glance at the color wheel will show opposite each color its complementary. Blue is the complement of orange, red-violet of yellow-green, etc. Take the first illustration, blue and orange. Orange is made by mixing the primaries, yellow and red, and the third primary is blue; therefore blue is the complement of orange. Likewise violet, a secondary color mixed from the primaries, red and blue, is the complement of the third primary, yellow.

All colors possess certain properties. We speak of color *hues*. In a broad sense the term hue designates the color, so, where the dominating note is red the colored object is said to have a red hue. Many artists, however, apply the word to variations in the secondary colors, thus if green

is varied from the spectrum green toward the yellow giving a yellow-green or toward the blue giving a blue-green, the *hue* is termed yellowish or bluish. In a good color composition the raw colors in their full intensities are seldom used, since the results are too crude. We usually use the hues in different *values* and *intensities*. The color temperature of the light used to illuminate the subject will affect all its colors. Thus if the light is yellow (2800°K) every color in the composition will be affected by this yellow light and their true hues changed.

We shall note as we progress that color *values* play an important part in our results. Values refer to the lightness or darkness of colors. Refer to the color wheel and the chart of color values, page 2. Note that

(Page 96, please)

New

DEVELOPER MIXING METHOD

Increases Keeping Qualities

TO avoid the annoyance and expense of having developer turn brown in the bottle, with the attendant dangers of stained prints or negatives if this darkened developer is used, a new mixing procedure has been worked out by Richard W. St. Clair, A.R.P.S. A partly-filled bottle of developer, mixed by this procedure in the spring, was left exposed to light in a college laboratory throughout the summer during which temperatures in the unoccupied room probably passed 100° F. and the developer was still clear and usable when the college opened in the fall. This mixing procedure requires more care, but amply repays the workers who use it by making it unnecessary to always keep the developer bottle filled to the cork by inserting glass marbles when part of the developer is withdrawn.

Two things are important in this procedure: (1) the carbonate must be kept away from the other ingredients as long as possible; (2) all utensils used must be clean.

In mixing the developer, the sulphite is dissolved in hot water (125° F.). Then the specified amount of elon is dissolved in hot water (125° F.). As soon as it is dissolved it is filtered into a clean bottle. The sulphite solution is then poured through the same filter into the elon solution. Sufficient hot water must be used in dissolving the sulphite to more than completely dissolve it, because if a strong elon solution is mixed with a strong sulphite solution the elon may be precipitated. Filtering should proceed as rapidly as pos-

sible. In the last few ounces of the sulphite solution the hydroquinone is dissolved and the filtration continued. The bromide may be added at any time. The bottle containing the elon, sulphite, hydroquinone, and bromide solution (if it has been added at this point) should now be shaken so that the chemicals are mixed vigorously.

At this point in our procedure we have in the bottle two developing agents (elon and hydroquinone) and a preservative (sulphite). Due to the fact that developers have a great affinity for oxygen, and we do not want them to oxidize because the result of such oxidation is a darkening of the solution and staining of negatives or prints, we have quickly added the sulphite solution to prevent this. Reviewing: By filtering the sulphite solution into the elon solution as rapidly as possible the elon is prevented from oxidizing, and by adding the hydroquinone to a fairly strong sulphite solution the hydroquinone is kept from oxidizing. The developer mixture should be clear.

Our developer at this point is incomplete, needing the addition of the carbonate as an energizer, or accelerator. After the above four ingredients are completely dissolved and filtered the filter-paper used is thrown away and all glassware must be scrubbed thoroughly, to leave no trace of the previously mixed chemicals. Next the carbonate is dissolved in a separate container and then filtered into another container. Finally the filtered solution of

(Page 92, please)

The secret of success lies
in preventing oxidation
during the mixing process

By DAWSON POWELL

FORMULA D72

To Make 1 Gallon Stock Solution

Elon	180 grains
Sodium Sulphite (desiccated)	6 ounces
Hydroquinone	700 grains
Sodium Carbonate (desiccated*)	9 ounces
Potassium Bromide	$\frac{1}{4}$ ounce
Hot Water (125°)	2 quarts
Cold Water	to make 1 gallon

* If monohydrated carbonate is used, increase the quantity to 10½ ounces.

FOLLOW THESE STEPS

1. Dissolve the sulphite in 48 ozs. ($\frac{3}{8}$ gal.) of hot water.
2. Dissolve the elon in 16 ozs. ($\frac{1}{8}$ gal.) of hot water (125°) and filter it into a gallon bottle.
3. Filter about half of the sulphite solution into the bottle containing the elon solution.
4. In the remainder of the sulphite solution dissolve the hydroquinone and filter this solution also into the elon solution.
5. Cork the bottle and mix well.
6. Dissolve the carbonate in 32 ozs. ($\frac{1}{4}$ gal.) of water and add the potassium bromide. Filter this solution into a separate bottle.
7. Add the carbonate-bromide solution *rapidly* to the elon-sulphite-hydroquinone solution.
8. Add water to make 1 gallon.

Here, for example, is how to mix 1 gallon of D72 by this method. Other developers or quantities can be mixed by following the same steps.

"IT'S NOT LUCK"

By LAWRENCE A. MONAHAN

Staff Photographer on COLLIER'S Magazine

ATTENDING a salon, have you ever paused before a striking print full of drama that held your attention only to feel the hot breath on your neck of a self-appointed critic bellowing in your ear: "Most fortunate shot—that?" Whether your blood pressure mounts in resentment depends on your personal experience. Why is every dramatic shot with a suggestion of movement labeled "accident"?

Such expressions often sway the decisions of salon judges, just as the booing of spectators can give pause to a referee or umpire rendering a decision. A national pictorial organization once hung in its annual salon a print of a baby peering with one eye at the camera a la peek-a-boo through a teething ring. It was one of those prints that "wowed" even the hardest-boiled spectator. It had appeal, print quality and all those other attributes that go to make up the perfect picture, so the judges rightfully did not hesitate to award it the blue ribbon of the show. At this, someone raised the cry of "accident" and protested to the judges, who immediately went into a huddle and returned with the verdict, "Guilty." They reversed their decision. The mere fact that the maker of the print was a professional specializing in the photographing of children counted for naught. The beautiful print was dubbed "just a lucky accident."

The accompanying reproduction, "Bringing in the Catch," has all the earmarks of being just such a shot. As long as I have been requested to tell the story be-

hind the picture, I feel the prologue necessary. The print as reproduced is an unadulterated glossy, made purely for reproduction—it lacks a gorgeous sky, projection control, compression of scale and local handwork, so whatever story there is must be about the shot itself.

About a year ago, while convalescing after an attack of the Flu, a friend suggested a trip to the shore to get the carbon-monoxide out of my lungs and a bit of sun on my blanched features. He had made some shots in the vicinity and thought it a good plan to look over the territory for future excursions. Needless to say, we took along our cameras, together with plenty of eats, and soon had things nicely spread out in a sheltered spot behind the seawall, when a two-wheeled contrivance drawn by a team of horses came through an opening in the wall and headed for the water. On the beach, it circled and stopped. The driver, standing upright on the rig, shaded his eyes and carefully scanned the horizon.

Something was about to pop. With mouths full of food we grabbed our cameras and legged it to the spot, the while opening our cameras and setting the aperture and shutter speed. Before we covered half the distance, we heard the purr of a motor coming from just behind the breakwater and by the time we had covered the next twenty yards a fishing boat was opposite us and circling for the shore. There was a mad scramble for position. The surf was bringing her in fast. The team and driver were positioned on the ground-

The STORY



"Bringing in the Catch."
Graflex, series D camera,
Agfa Superpan Press film de-
veloped in Agfa 15. Shot
at f16, 1/160th second.

**This lensman knew what he
wanted and was not averse to go-
ing back for it fully prepared**

Behind the Picture

glass and the spot where the boat would hit the beach approximated. When she hit the desired spot, I gave her the gun, and before I could pull out the filmpack tab she hit the beach.

Additional shots were made as she was hauled out beyond high water by the team, but all day I had a cozy (but false!) feeling that the first shot was the one worth while. The actual time, from her first appearance around the breakwater to landing, could not have been more than a minute, and another five found her snug as a bug high on the sand, so you see there was not much time for planning. Though my first shot was deliberate and the action timed, it was not 100%. What is more, I had been a bit rough in tearing off the filmpack tabs. A good part of the negative was light struck. I made an 11x14-inch print, burning in as best I could the fogged areas. For days after, I would stare at the print and curse my luck.



The first shot, above, was a failure.



By the time this exposure was made, the action had slowed down. The crew is seen merely holding the boat from the undertow while the gear is made fast. Both of these exposures were fogged, so the photographer returned for a "retake" the result of which can be seen on the previous page.

I remembered clearly those hectic seconds on the beach when time was so precious, and decided to go again to the same spot. This time, I would be prepared. On a late spring day, off we went to the seaside. The day was cloudless, and the light was good. We saw the horses standing in the same position I had shot them. A new driver was leisurely leaning against the rig smoking a cigarette.

Eager questions brought forth the information that there would be no boat for another three or four hours as one had been hauled out about a half hour before our arrival. Disconsolately we made our way back to the car, when we heard the familiar purr of a motor. Back we scrambled, jockeying for positions, when suddenly a boat appeared from behind the breakwater as before. A quick glance at the groundglass told me I needed a foreground, so I backed off a yard or so to make use of some ruts in the sand. I positioned the horses and watched the boat approach in a wide arc. The driver had picked up a block through which the rope was reaved and advanced toward the spot the boat was to beach. Each step he took widened the gap between him and the horses, so I had to move slowly in the opposite direction to keep the spacing within reason. Meanwhile the boat was coming in swiftly. With one eye on the boat and the other on the man and horses, I waited for the boat to hit the selected spot. Just as an oncoming wave spanked her, I pressed the shutter release. At the same moment, the driver moved his head across the after part of the boat. I did not know this at the time as I was watching the boat, not the man. There is a nice highlight on his cap that pulls him out of the tone of the boat, but an eighth of an inch separation on the print would have made me happier.

All in all, I do not feel so badly about missing my first attempt, for the second shot found me prepared and resulted in more action.

One way to learn how to tame "Lady Luck" is to retake a subject that you like until the result is what you want.

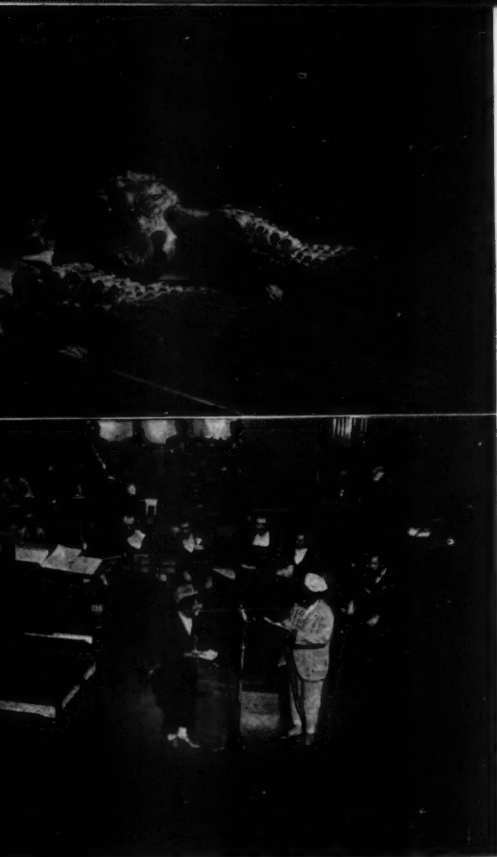
WHAT'S in a neckline? The difference between length and breadth, between a good portrait and a mediocre one. If your model has long, thin features, provide a dress with a square neckline to broaden the face. A low V neck should be worn by the model with a broad face, to add length. A circular neckline neither broadens nor lengthens—hence it is ideal for the subject of medium proportions.



Vary the **NECKLINE**

By HENRY CLAY GIPSON
Illustrated by the Author





Take It

"Alligators at 15 seconds."
By Jacob Daschin, A.R.P.S.
The zoo, at first glance,
looked like the proverbial
inside of a coal mine at
midnight. The camera,
however, was not scared
off, saying, "Just give me
enough time, and I don't
care how dim the light is."

Broadcasts are well enough
lighted to come within
snapshot speed only for
the fastest lenses. Taken in
the CBS playhouse show-
ing Al Pearce on the
stand. Contax Camera,
Agfa Ultra Speedfilm, f/1.5,
1/50th second. Developed
in Infinol. With the cam-
era on a tripod or other
firm support, and the sub-
ject standing still, the same
exposure would be obtain-
able with an f/4.5 lens at
1/5th second.

MOST pictures are taken at snap-
shot speeds, at about 1/50th of a
second. With emphasis on freez-
ing action pictures at 1/100th to 1/1000th
of a second, we are overlooking many
good bets in picture opportunities.

But by using the s-l-o-w-e-r speeds of
1/10th of a second to one second, hitherto
unapproachable subjects suddenly become
camera fodder. Dark and cloudy days,
early morning or late afternoon light
holds no terrors for the lensman who has
the patience to take a time exposure. As
a matter of fact, many pictorial artists,
such as Leonard Misonne, hold that early
morning, when the mist is still in the air,
is the *only* time of day for picture taking.

Clouds, rain, snow and storm, instead
of driving the photographer indoors, now
bring him rushing out with a camera in
one hand and a tripod in the other. And
then there are the shots indoors in homes,

offices, and public buildings—all made
possible without extra illumination.

A tripod will hold the camera in a per-
fectly steady position for an indefinite
length of time but any solid, non-moving
object with a flat surface also can do the
job. As a matter of fact, some tripods,
because of poor design or construction,
are far less secure and steady than many
substitutes.

When is a tripod necessary? There are
differences of opinion here. Some say that
no exposure should be made from the
hand at slower than 1/100th of a second;
others go to the other extreme and declare
that, given a steady hand, it is quite pos-
sible to shoot from the hand at 1/5th and
even 1/2 of a second. It is assumed,
naturally, that the object is not moving.
Some workers find even 1/25th too slow
to prevent camera shake. As a general
rule, 1/50th of a second can be chosen as

the slo
diaphr
lightin
quirem
support
1/50th

If a
may be
bly the
can find
near th
may be
in Fig.
vided b
curved

S - L - O - W - E - R

By JACOB DESCHIN, A. R. P. S.

Do they say, "You can't shoot that! There's not enough light!" Here's the answer.

the slowest hand exposure, adjusting the diaphragm opening to suit the available lighting conditions and the particular requirements of the subject. Use a camera support whenever a speed slower than 1/50th is required.

If a tripod is not handy, a substitute may be contrived. A strong table is probably the most rigid tripod substitute you can find. Fig. 6 shows a camera in action near the edge of a table. A window sill may be used, or a stool, or a wall, as seen in Fig. 1. In Fig. 2 a flat surface was provided by placing a box on top of the curved surface and an up-angle achieved

simply by lifting the front with a small film can. In Fig. 1 the camera was held flat against the wall after the subject had been properly sighted and focused. While a cable release is usually associated with time exposures these positions plus the type of shutter release shown assure a steady release by using the camera release itself, particularly in the case of Fig. 1.

Thousands of camera fans pass through Grand Central Terminal, New York City, without realizing its pictorial possibilities simply because the scene is indoors. This was taken at snapshot speed by N. Field with a Rolleiflex, $2\frac{1}{4} \times 2\frac{1}{4}$ ", Zeiss Tessar f3.5, Agfa Superpan Press film developed in Agfa 17. Exposure, by Weston Meter 1/50th at f5.6. Print on Agfa Brovira developed in Agfa 125.



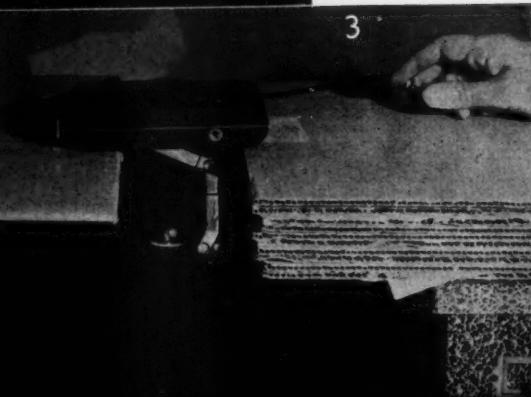
Occasionally, it is desired to make a picture with the camera lens lying parallel to the subject, as in copying. This position, too, can be arranged without the use of a tripod. One solution is shown in Fig. 3, where the top and bottom of the camera body front are supported by corrugated cardboard placed on stools, with the height of the smaller stool equalized by piling up a box and several sheets of the cardboard to achieve a level camera position. In lieu of a table, window sill, chair or similar support, a ladder may be utilized (Fig. 7) with perfect success. A ladder will serve ideally in those cases where a relatively high position is desired and tilting the camera may be accomplished by the several methods shown in Figs. 2, 4, and 9.

The need for a higher vantage point is accomplished on the table or other support merely by using boxes, books or similar aids in raising the camera position (Fig. 5),

while a down-tilt or an up-tilt of any degree is achieved simply by supporting the front or the back of the camera in a tilted position. The degree of the tilt can be varied by using boxes, wood or other supports of the required height. Thus, Fig. 2 shows the camera in position for a moderate tilt, while Fig. 4 shows the use of a wood block to provide an extreme up-tilt of the camera.

Various tripod substitutes are also available commercially. One such device is the Trigger Tripod, shown in action in Fig. 8. This was designed chiefly for the convenience of being able to operate the camera shutter with one hand, although it also serves for a steady camera support. So-called "chest tripods" equipped with a strap attached to one end of a unipod are found effective by many. The strap is suspended from the neck and the unipod braced against the chest. In this position the camera may be held reasonably steady for short time exposures up to possibly a full second, depending on the individual. Another device, useful both indoors and out and particularly for nature work, is the Optipod, which can be attached to the back of a chair or, outdoors, to a tree branch, and swiveled about until a desired angle is achieved.

The general principles employed in tripod substitution



1. Camera held flat against a wall.
2. A box and film can on a concave surface.
3. An arrangement for vertical copying.
4. Wood block used for extreme up-tilt.

indoo
stone
Resti
wall
achi
1/10t
stead
St
for th
of the
quent
lens,
camer
Pic
wise a
probab
Da
made
have b
plished
stone r
front o
Da
The fo
lens is
1/5th o
and be
tively s
for rea
a stead
or other
it is ne
include
shut" fl

indoors may also be employed outdoors, where a flat rock, a stone wall, the back of a park bench may all be used effectively. Resting the camera on one knee or holding it flush against the wall of a house are other methods. In the theater, you may achieve camera steadiness for those shots requiring 1/5th or 1/10th exposures by bolstering the arms against the body while steadying your back against the seat.

Still lifes and table-tops require a camera support not alone for the time exposure that is usually called for, but also because of the care required to compose such subjects. Besides, it is frequently necessary to employ a so-called supplementary close-up lens, the use of which necessitates exact measuring between camera and subject.

Pictures outdoors at night may sometimes be made snapshot-wise at 1/25th or 1/50th of a second, but most of them will probably have to be tripod (or substitute) exposures.

Dark interiors are usually give up for lost or a snapshot is made with a blank result. "Alligators at 15 Seconds" might have been passed by but for a time exposure. It was accomplished within 15 seconds at *f*8 by steadying the Rolleiflex on a stone railing and tilting the camera downward by tucking the front of the everready case under the camera.

Dark days, early morning shots often call for time exposures. The formal portrait, especially when a long focus or telephoto lens is employed, frequently calls for a short time exposure of 1/5th or 1/2 second. Color shots require full definition throughout and because of this as well as the fact that color films are relatively slow, time exposures are often necessary. Stereo pictures, for reasons of full definition from nearest to farthest planes, need a steady support where a deep field is to be covered. A tripod or other support is also required in copying; in instances where it is necessary to make a series of shots of a subject which must include exactly the same area in each picture; in "open-and-shut" flash work; and in other fields.

5. Boxes or books to raise the camera.
6. In action near the edge of a table.
7. A ladder may be utilized.
8. The trigger tripod.
9. Wood block used for tilting.
10. Camera on a window sill.





GUNNING FOR PICTURES *behind*

BOMBS from the air . . . shells from the German guns that ringed Warsaw in a circle of steel . . . homes, apartments, stores blasted by explosions . . . cries of the wounded, the dying . . . shrieks of terrified women and children . . . night skies lighted by dozens of incendiary fires . . . stoical resolution . . .

soldiers returning home at intervals with their rations to feed starving wives and children . . . refugees huddled in the cellar of the American Embassy, awakened by shells exploding . . . these are some of the memories that haunt Julian Bryan, ace American cameraman and lecturer, who left Warsaw only a week



1. Polish refugees encamped outside the Warsaw opera house which housed 500 refugees. Note shrapnel-scarred walls. (Previous page, upper left.)

2. Ruins of bombed church in Warsaw. Only the crosses remain intact. (Upper right.)

3. Refugees camping out-of-doors with salvaged household goods. (Lower left.)

4. Damage done by exploding shell to Eastman Kodak laboratory in heart of Warsaw.

5. All of war's sorrows are revealed in this remarkable study of a Warsaw woman sitting by her window which had been shattered by a bomb concussion—and still continuing to pray and hope for peace amid the horrors of war.

6. (Below) Julien Bryan in action with one of his cameras, a 35 mm. Bell & Howell Eyemo, during the siege of Warsaw. From a precarious rooftop perch, he shot the flight of Nazi war squadrons.

the lines

by

A. J. EZICKSON

Telephoto Editor, Times-Wide World

PHOTOGRAPHS © JULIAN BRYAN



before the city's final capitulation.

Bryan brought back to New York five hundred still pictures, the only uncensored, exclusive photographs of the Polish capital made during the height of its siege, from September 7 to September 21. The story of the cameraman who of his own volition left the safety of Rumania to plunge into the cataclysmic depths of war-torn Poland, who dared enter its capital when every foreign reporter and photographer had already fled to less-exposed places, who remained while the shelling and bombing grew daily in volume and ferocity and recorded the scenes of death and destruction with his camera, is an adventure worthy of the spirit of a Galahad, a Livingstone, or a Peary. He escaped without a scratch, and, what is more miraculous, with a picture record of the bombing and shelling of a modern city, in which each picture tells a powerful story, reveals a gruelling experience.

For five days after his arrival in Warsaw, Mr. Bryan roamed the city without an official military permit, constantly risking arrest. He had made application for a permit, but officials were busy with other matters. In the early morning of the 12th, an affirmative answer came, but no sooner did the Poles grant permission than an offer came to help him leave the city. Under the circumstances, few men would have waived such an opportunity. Major Colbern, American military attache, had been ordered to Brest Litovsk to help evacuate Americans. The one available place in the car that was leaving the Embassy was offered to Bryan. Should he go? Bryan decided to stay in the besieged city.

Accompanied by a Polish interpreter and an officer, he made the rounds, photographing the life of a people under siege. He used a Leica and a Bell and Howell movie camera. He photographed homes that had been torn to shreds by direct hits, the ruins of large apartment houses appearing as if they had been struck by a giant cleaver, the effect of a bomb with a delayed fuse, exploding only after it had reached a lower floor. He

skirted huge bomb craters to snap rescue workers digging frantically into the ruins for the dead and the injured; he recorded the ruins of factories burnt into masses of twisted girders and machinery; he photographed old men, boys in knickers, girls, and women sweating over pick and shovel digging trenches in the city parks and streets. Then there were the closeups of unforgettable faces, faces that ever turned skyward for the sight of the enemy planes that were coming over in larger and larger numbers, faces imprinted with the marks of terror, drawn faces with sunken cheeks and eyes red and weary with sorrow and lack of sleep . . . Bryan made dozens and dozens of such pictures.

After a heartbreaking day Bryan would return to the American Embassy where he had found shelter with dozens of other refugees. He made his bunk with servants in a hole in the cellar, outside the kitchen at the rear of the Embassy. All during the time he stayed there he never removed his clothes. The residents covered the windows with heavy black paper and sandbagged the outside of the building.

As the days wore on, the bombing grew fiercer. The Germans had moved up to the city, and heavy artillery pieces were shelling every section. Food became scarcer. There was little or no water. The mains had burst. Wisely, all the bathtubs and every available tub in the Embassy had been filled to capacity with drinking water, and was rationed sparingly. One night a big shell landed outside the kitchen window which luckily was sandbagged the night before. The concussion was so great that it forced the heavy paper covering on the windows clear across the kitchen. On another occasion a shell hit a tree directly in front of the house. A building not ten yards away was the object of another hit.

On the 16th, Bryan had a miraculous escape from death. Up to that time he had made dozens of pictures. At first he had planned to save all his exposed film and have it processed after leaving Poland, but then he decided to test a half dozen rolls to determine his results thus far. He went by car to the

(Page 89, please)

SELL

the small fry FIRST

By **HOWARD BRISCO**

City Editor, Bristow (Okla.) Record

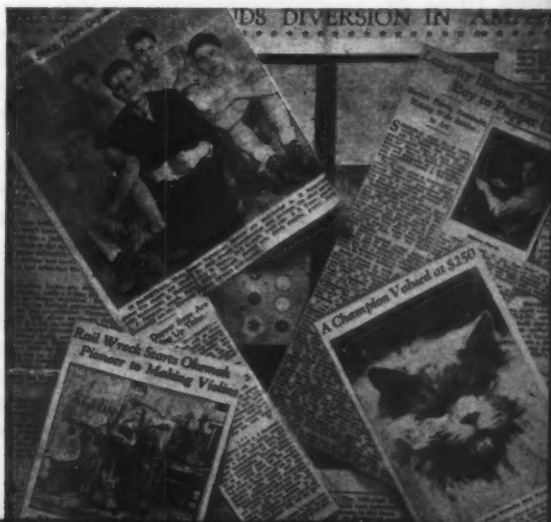
ON all metropolitan newspapers worthy of the name there is a gentleman called the Sunday editor, feature editor, or picture editor. He is the man who can give the budding freelance photographer a boost. It is his job to assemble the Sunday magazine section and to make it as interesting as he possibly can. He'll gladly buy your photographs and feature stories—if they meet his requirements.

No matter whether you live in a metropolis or a tank town, there are feature stories around you that will sell your pictures to state newspapers and perhaps to larger publications elsewhere. But before you can peddle them successfully there are a few things that you absolutely must know.

News is probably the most divergently

defined word in the English language, but for the purposes of this article, consider it merely as synonymous with "unusual." The more unusual the event or fact is, the more news value it has and the more readily will it sell your glossy 8x10 photograph to a newspaper editor or a syndicate. An example of the news story is this one which landed on the front page of practically every newspaper in the United States. The locale was a remote island in the Pacific so heavily infested by rats that the residents were forced to import large numbers of cats to control the situation. For a while everything went along swimmingly with the felines doing their duty in a praiseworthy manner. Then one day, by accident perhaps, the rats learned the magic power of co-operation, and the amazed citizens were treated to the spec-

Short, one-picture newspaper features like these provide easy entry into the fascinating field of photography for publication. Study the feature pages of your metropolitan newspaper for an understanding of what the editor wants.



tacle of a dozen rats chasing a large cat down the main thoroughfare. That was news!

Is there in your community a marbles champion who has no arms, a female cobbler, a cat worth \$250? Probably not, but all three of these sold pictures for me. The marbles champ, a negro boy of 16, shoots the marbles with the toes of his right foot and has won several tournaments. The woman cobbler is supposed to be the only one in the United States, and the big Persian tabby is a double champion show winner.

Maybe you have in your town a high school basketball or football team that hasn't lost a game since the Chicago fire? Okay, that's what the sports editors are looking for. I drove fifteen miles after such a picture one Sunday morning and sold it to a newspaper with a short outline of the team's record. Overlooking no bets, I then sold ten dollars worth of prints to the players, who were glad to have them as souvenirs of a successful season. On the way home I called on a bearded hermit whom I had heard described as an authority on early Oklahoma history. I made several shots of him and expect the story and pictures to grace the pages of a magazine section before long.

You can see that I am steering you away from the big stories, magazine features and the idea of sudden success. Unless you have had considerable writing experience coupled with real photographic skill it is better to start with the small fry. The one-picture Sunday feature is the answer. Your checks—after you learn what is salable—will average from \$2.50 to \$5.00, and you will earn every cent of them, but you will be gaining valuable experience which will be of use when you start shooting at bigger markets.

A great many amateurs battering away at the newspaper's gate fail because they do not analyze their stories. Before submitting illustrated features ask yourself: Will this surprise anyone? Will it give the reader something new to think about? Will it cause him to show it to his wife,

or to mention it to his associates?

Newspaper editors in the active days of Pulitzer and Hearst had a formula that was a sure-fire circulation stimulant. They slanted their editions, and especially the Sunday magazine, to cause the reader to exclaim, "Gee whiz!" That's not a bad formula for the free-lance photographer. If he can make the reader resort to that boyish expletive, he can sell his pictures.

Make your stories brief and to the point, but include all relevant information in simple style. If the editor doesn't like the way your story is written, he can pass it over to a rewrite man who in fifteen minutes will whip into shape the yarn that you have slaved over several hours.

Occasionally you may stumble into something that is worth a full-page spread. In that case, it is generally best to write the Sunday editor a letter explaining the story and the treatment you expect to give it. If the idea clicks, he will probably give you an assignment to cover it. Full-page features are worth searching for, since some of the larger dailies pay as much as \$75 for them.

Study the feature pages of your metropolitan newspaper for an understanding of what the editor is buying. Then look around you for similar material.

If it is possible to tie in a pretty girl with your story, include her photograph. Of the thousands of photographic subjects that parade before the picture editor not one is so apt to catch the eye as a good shot of a personable girl in a bathing suit. The editor of any newspaper, large or small, is a harassed individual whose fervent desire is to make the deadline with an edition that people will read, and he knows from experience that sex appeal will never let him down. So when you shoot the hen that laid four eggs in one day, pose Biddy in the hands of a pretty girl.

In newspaper pictures the emphasis ordinarily is on the story, which means that there must be justification for the shot. Don't pester editors by sending them shots of your dog doing his cute tricks. They may be good (Page 102, please)

Follow the figurative evolution of a camera from a makeshift box to a modern miniature

IF you have to make a picture, but own no camera, you can take a discarded but light-tight cigar box or paper carton, put a piece of film in one end, stick a pin-hole in the other and take your picture.

The result will be a recognizable reproduction, although rather fuzzy in appearance. Lack of sharpness will not be the only limitation of our makeshift camera. For one thing, a pinhole admits relatively little light. An exposure of 10 seconds is required even in bright sunlight with one of the fastest films such as Superpan Press or Super XX.

We try enlarging the pinhole. This permits more light to enter, but the sharpness of the image falls off.

The pinhole is replaced with a simple lens. The image cast is brighter than the pinhole image, but still rather fuzzy.

The simplest lens is a positive meniscus, which is a circular piece of glass, having one surface which curves outward (the convex surface) and one which curves inward (the concave surface). The curvature of the convex surface is greater than that of the concave surface, so the lens is thicker at the center than it is at the edges. This makes it a positive or magnifying lens, capable of forming an image of a bright object on a white sheet of paper, a piece of ground glass, or a sensitive film held a few inches away from it. The rays coming through the center of the lens appear to focus more sharply than do those coming through the circumference.

A piece of metal or cardboard with a hole in it about one-third the diameter of the lens, placed in front of the lens, works a surprising improvement. The image loses a lot of its brilliancy, but it makes up for it by being much sharper.

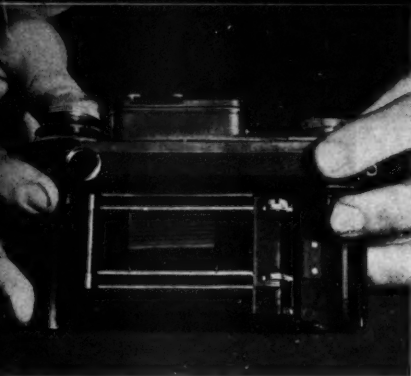
We now have the main optical system of the typical, low-priced box camera—a meniscus lens and an aperture plate. The lens gathers more light rays from a given point than the pinhole lens possibly could, and brings them to a focus on the film. The aperture restricts the light rays to the central portion of the lens.

With a pinhole or other experimental camera, the exposure can be made with a lens cap that is removed for the desired number of seconds and

SOME CAMERA



By WALTER E. BURTON
Illustrated by the author



then replaced in front of the pin-hole or lens. (As a matter of fact, many old-time photographers still use a lens cap in this manner for time exposures.)

With our new lens, the hand-capping method is too slow. So we rig up a system of levers and springs that will flip a piece of sheet metal back and forth in front of the lens, and cut a hole or slot in the metal so the lens will be uncovered for about 1/25th second every time the plate makes a passage. The result is a typical box-camera shutter.

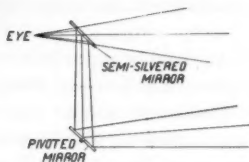
Now, if we can arrange some system for using roll films, including a key for winding the film, and a red window behind to keep track of how we wind it, we have a fairly versatile camera.

Like most photographers, we soon become dissatisfied, and start looking around for improvements. One of these will be a means of making the camera focus on a rose blossom three feet away as easily as on a distant building. To do this we arrange a mechanical system for moving the lens closer to the film and farther away from it. Now we have a focusing camera.

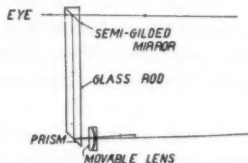
The adjustable lens is of no use, we soon discover, unless we have some way of telling just when it is in focus. The oldest method of doing this makes use of a sheet of ground glass replacing the film in the back of the camera. With the

shutter open, the image seen on the ground glass can be studied as the lens is racked back and forth until the sharpest point is ascertained. The film then is put in place and the picture made.

This system has long been in use, and is still a favorite. It is embodied, in another form, in the single-lens reflex camera. A

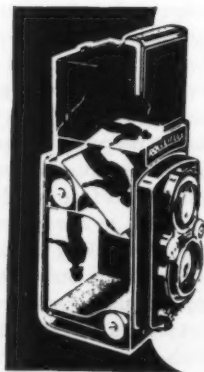


Focal-plane shutter in Contax III (top) is made of metal. The slight misalignment of the shutter is the result of propping it open for the picture.



Diagrams of two types of lens-coupled rangefinders. The top diagram illustrates the use of the pivoted mirror. The lower diagram shows the sliding lens type such as is used in the Contax.

mirror, which swings on a hinge, is placed inside the camera in the path of the rays from the lens. When set for focusing, the mirror is at a 45° angle, and reflects the image from the lens upward to a pane of ground glass, where the image can be examined and focused. When the shutter lever is pressed, the mirror swings up under the ground glass an instant before the shutter opens. In this type of reflex camera, the shutter is generally of the focal-plane type, which lies just in front of the film at the back of the camera.



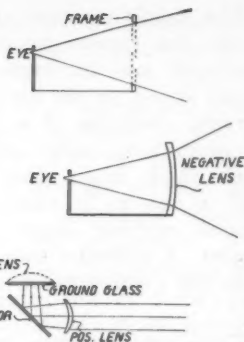
Twin lens reflex camera indicating image (bottom) on film, on the reflecting mirror, and on the ground glass screen.

Another common type of reflex camera is the twin-lens. This might be described as two cameras fastened together, one on top of the other. The camera at the bottom has a place for film and a shutter. The one on top has a horizontal ground glass, and a fixed mirror, set at 45°. Both have lenses of equal focal length, and both lenses move in and out together. The top lens is used to focus the pic-

ture, and the bottom one to take the picture.

Practically all focusing cameras have a footage scale that indicates where the lens should be set to bring an object at a given distance into sharp focus. The only catch is that you must estimate or measure the distance from the camera to the object. Besides guesswork or a yardstick for determining the actual distance, optical rangefinders are employed. These are two-eyed gadgets, each lens of which casts an image in a single eyepiece. Adjustment is effected by turning a knob which rotates a glass prism or mirror, which in turn causes one eye to swing toward the other. (It is precisely like a man with a cast in one eye.) The crossed eye is swung back and forth until the image which it forms coincides with the image formed by the other eye. At this point, the distance can be read off on a scale, and the camera can be set to match. By means of levers and gears, the movable parts of a rangefinder can be hooked to the focusing mechanism of the camera, to give the coupled rangefinder used on many higher priced cameras.

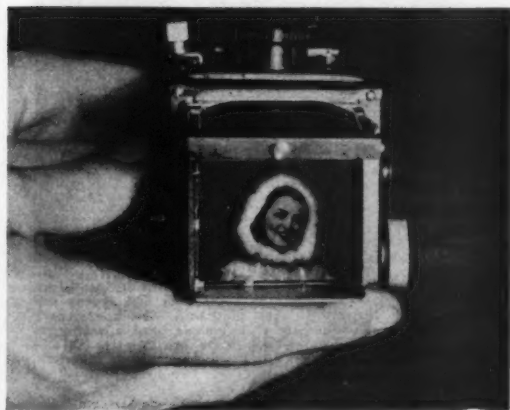
We began with a pinhole camera, moved up to a simple box camera, converted that to a focusing camera, and went so far as to put in a mechanism



Direct wire of frame finder (top).
Direct finder using one lens (center).
Waist level or "brilliant" finder (bottom).
A positive lens forms the image and a ground glass screen or another lens (shown by dotted line) renders the image visible.

by which the camera could be focused visibly. In much this way, the present-day camera has been evolved. There are, however, many improvements and fine-points of camera design which have not been mentioned.

Lenses, alone, constitute a whole study in themselves. Suffice to say that better, sharper, and faster lenses have been steadily evolved. The most commonly used type is called an anastigmatic lens. Such a lens may cost anywhere from a few dollars to several hundred dollars, and consists of three or more separate lenses put together to form an optical unit.



Looking down on the ground glass viewing screen of a reflex camera shows an upright, but reversed, image.

View camera for studio use, showing the rising front and the back's adjustment for swinging and tilting. Some of the corrections obtained by these adjustments are also obtainable during enlarging. The negative in such a case may be made with an ordinary hand camera and the image corrected or distorted at will by adjusting the lens or negative in the enlarger.



The simple aperture plate of the box camera has been developed into an ingenious device known as the iris diaphragm, consisting of a ring of overlapping plates and a lever which moves them in such a way as to make the central opening larger or smaller. A calibrated scale enables the f values to be read off.

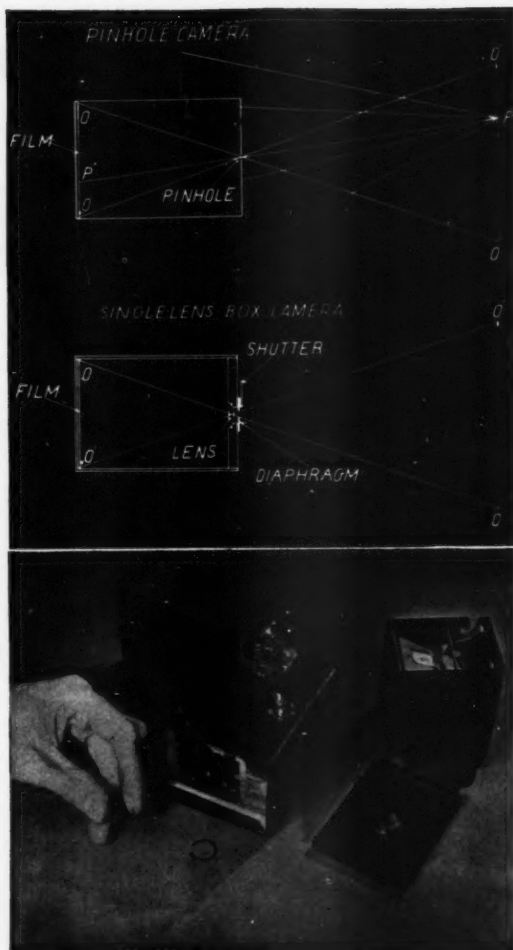
There are numerous types of shutters. One of the most familiar is the between-the-lens shutter, of which the Compur and the Kodamatic are examples. These shutters are put between the elements of the lens. By means of a clever clockwork mechanism, flat metal leaves are made to open and close in such a way as to admit light through the lens for a predetermined length of time. The duration of the exposure is indicated on a scale. There may be a single leaf, double leaves, or several of them, depending upon the degree of refinement of the shutter.

In studio cameras, the shutter may be placed behind or in front of the whole lens, and often consists of one or two flaps that open and shut like doors; or it may simply employ a curtain, like a miniature window blind, which moves past the lens, and in which there is a slit for admitting light.

A second, widely-used type is the focal-plane shutter. It gets its name, as was mentioned before, from the fact that it operates close to the film, and is therefore near the focal plane of the lens. One commonly used form consists of a light-proof curtain of cloth or metal in which there is an adjustable slit. The width of

the slit, and the speed with which it passes the film, determine the length of the exposure. Another kind employs a rotary disc having a suitable slit.

The box camera has one disadvantage: it is bulky. To obviate this, some cameras have bellows which are collapsible, and the camera is so designed that it can



One of the box cameras, of which there are millions in use, is not much different from a cigar box with a piece of film at one end and a pin hole at the other. (See diagram.) The box camera employs a piece of glass instead of a pinhole, and a shutter to open and close the opening rapidly. Some box cameras have a diaphragm next to the lens to permit adjusting size of aperture.

The lens in an inexpensive box camera is a single-element meniscus, held in place by a wire ring. Note the frame-type viewfinder.

be f
not i
Ca
scop
pictu
of th
lens
came
Th
help
In
dicat

An Iris
(above)
rying
beam t
is mad
ping l
move i
ward a
lever
moved
apertu
n

A—Apert
D—Shutt
C—Spring
S—Slot
T—Trigg
E—Capp

In diagr
of the sl

be folded into a small space when it is not in use.

Cameras can be hitched to a microscope, in order to take highly magnified pictures. In this case, however, the lenses of the microscope are used instead of the lens of the camera. Special microscopic cameras are constructed for this purpose.

The following definitions may prove helpful:

Infinity, on the focusing scale, is indicated by the symbol ∞ , and refers to

a point of focus at which everything from there to the moon and beyond is in sharp focus.

The *aperture* of a camera lens is the hole through which the light rays have to pass before they reach the film. It is adjustable in all but the cheapest and simplest cameras. *Diaphragm opening* and *stop* are the same as aperture.

F values are a way of expressing the size of the aperture, and are based upon a relation of the diameter of the aperture to the focal length of the lens. Thus, an $f/8$ aperture means that the diameter of the opening is one-eighth of the distance from the node (or central point) of the lens to the film.

Tripod sockets are threaded holes in the camera body to receive the screw of the tripod. American cameras use a $\frac{1}{4} \times 20$ thread.

One or more *spirit levels*, which are small tubes containing water and a bubble of air, are sometimes mounted on cameras to help tell when the camera is being held level.

The *shutter release* is the button or lever which trips the shutter.

A *cable release* is a flexible wire cable, usually about six inches long, which operates inside a flexible tube. It is also used to trip the shutter.

A *body release* is a shutter release built into the body of the camera.

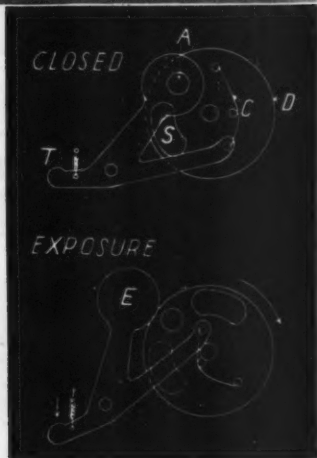
The *bed* of a folding camera is that part which swings down to a horizontal position, and on which the focusing mechanism and the tracks are mounted.

Camera adjustments: many cameras have no adjustment of the lens in relation to the film

(Page 93, please)



An iris diaphragm (above), used for varying size of light beam through a lens, is made of overlapping leaves that move inward or outward as the control lever or ring is moved to the desired aperture or "f" number.



SIMPLE BOX CAMERA SHUTTER

A—Aperture admitting light to lens.

D—Shutter disc.

C—Spring that snaps disc around.

S—Slot in shutter disc.

T—Trigger or release lever.

E—Capping disc, preventing double exposure as disc D returns after T is released.

In diagram marked "Exposure," the dotted line shows the position of the shutter disc slot an instant before T reaches downward limit.



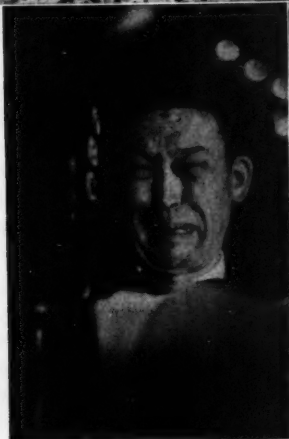
Shooting

By WILLARD BALL



1. (Top) Arturo Toscanini directing his orchestra, a candid shot of the artist in a broadcasting studio.

2. Here is one thing radio stars do with their pictures — Irene Rich autographing portraits for distribution to admirers.



3. Fred Allen (above) caught in a fearful moment by an NBC candid cameraman during a broadcast.

4. "We Protest," cry Howard and Shelton in humorous garb.

5. Fred Waring and his orchestra (bottom) launching the first series of regular NBC television broadcasts.



I
busi
per
pres
to k
T
Bro
by
prom
Rad
ture
play
hea
som
How
prin
spir
But
one
Jack
to f
to p
the
that
stop
buil
leas
T
mak
pap
mar
know



Rudy Vallee, an ardent minicam fan, turns the tables and does some snapshooting himself.

IN New York City there is a studio where more stars of radio, motion pictures, sport, stage, politics, and business have been photographed than perhaps any other place in the world. The present major worry of that studio is how to keep Charlie McCarthy on the wall.

The studio, maintained by the National Broadcasting Company, and presided over by Ray Lee Jackson, displays pictures of prominent radio stars at several points in Radio City. And the job of keeping pictures of Charlie McCarthy in these displays has developed into somewhat of a headache. Charlie's friends, it seems, sometimes are gifted with nimble fingers. How they manage to remove the prints from the display spaces and spirit them away remains a mystery. But the pictures disappear, and new ones of Charlie have to be made. Jackson has learned by experience not to fasten the pictures too firmly, or to put them under glass. So great is the enthusiasm for the wooden star that some of his admirers might not stop at wrecking a portion of the building if that were necessary to release the prints.

The pictures Jackson and his men make are used the world over in newspapers and magazines to let you and many millions of other radio listeners know what Fred Allen and Fred

Waring and Lucille Manners look like. Jackson himself takes the portraits, for that is his special field. All of the N.B.C. photographers are candid-camera experts. Each week, 5,000 8x10 inch prints are mailed to hundreds of newspapers. These pictures cover a dozen different subjects, from what Charlie McCarthy did at the World's Fair, to what the latest evening gown looks like on one of the radio glamour girls.

Ray Lee Jackson is a seasoned hand at handling temperamental dynamite. Many of his camera subjects are high-strung, nervous, short-tempered; but he makes pictures of them where others have failed.



This unusual picture was obtained by combining portraits of Edgar Bergen and of his famous dummy.

A few minutes with Jackson would tell you why. He gives you, almost immediately, the impression that he has never known a stranger—that he can get along handsomely with anyone.

And there is another angle to Jackson's success. He wastes no time in making his pictures. He can, with either a candid camera or an 8x10 view camera, make 30 or 40 portraits in twenty minutes—and all will be usable. He can shoot 70 pictures of the same person and get 70 different prints. Temperamental radio stars are pleased at this speed. Furthermore, the sitter usually becomes so engrossed in Jackson's method that he or she forgets to be fretful. In action, Jackson resembles an acrobatic dancer. He is likely to jerk the sitter's head around rather abruptly into a new position to make the next shot; but no sitter seems to mind.

Fred Allen provides the most fun during portrait-making, Jackson says. Many of Fred's pictures are stunt or gag poses; and he can think up gags faster than Jackson can shoot them, which is pretty fast. Both Fred and his wife, Portland, are easy to work with.

Some of the seasoned motion picture stars who appear on the air, and who have had hundreds of hours experience before a movie camera, are positively nervous when they try to pose before Jackson's still camera. Jackson isn't sure he knows the reason for this, but he has learned that, if he gives them a little time, and lets them become interested in what he is doing, their self-consciousness disappears.

Arturo Toscanini, noted orchestra leader, is probably one of the most difficult subjects for a photographer, and he has refused to pose for most of them. But Jackson made 16 pictures of him in 14 minutes. These portraits were the only ones Toscanini posed for in the United States. They were used by him throughout a recent tour.

All of Edgar Bergen's favorite pictures of himself and Charlie came from Jackson's studio. These pictures have had unbelievable circulation, having been pub-

lished all over the world. Bergen and Charlie are "naturals" for the camera, and are easy to pose and photograph.

Ed Wynn, Jackson says, looks alike in all his pictures, but he always cautions the photographer not to open the shutter until he (Ed) is in the mood. This mood, as recorded by the camera, is always the same.

Rudy Vallee. Besides being easy to photograph, he is a camera hobbyist, and, Jackson says, probably knows more about the technical end of photography than he does. Rudy has a lot of camera equipment, likes to shoot candid pictures, and likes to talk about lenses, films, and other phases of the world's biggest hobby. He is one of the few prominent persons who can turn the tables on candid-camera shooters. Rudy often sends Jackson prints of a personal nature.

If Jackson were to enumerate all the celebrities he has had before his camera in the little room on the fourth floor of the R. C. A. Building, the list would look like a roster of the world's big names. There would be such political notables as Al Smith, Jim Farley, Gen. Hugh Johnson; such stage names as Helen Menken; and almost all the operatic stars of the past decade. Not long ago, Jackson shot his 10,000th "radio" portrait; and most of the 10,000 subjects were big names that have taken the air.

In the photographic files at N. B. C. can be read many little stories of success and tragedy. Over a period of ten years, repeat photographs are made of the leading radio personalities. Reading from left to right, these show how a particular star has aged, how another star has blossomed from a shy, just-in-from-the-sticks damsel into a radiant lassie with plenty of glamour. Under this heading comes Dorothy Lamour, whose first glamorous publicity portraits were made by Jackson. And in the files can be read the sad stories of radio personalities that soared to the zenith, shimmered there for awhile, and then slipped, for some reason or other, into oblivion.

Radio performers pay nothing to have

their
If the
their
the s
Max
He go
"If
mech
are th
About
profe
make
photo
photo
the a
a pict
He
room
jects
studio
lande
down
viewe
Triple
know

Judy C
J

their portraits made in the N. B. C. studio. If they wish, they can purchase prints for their own use. One time the even tenor of the studio was upset by an order from Max Baer for 10,000 prints of himself. He got them.

"If you are a photographer, forget the mechanism you use," Jackson says. "You are then more likely to get good pictures. About three-fourths of the photographers, professional and otherwise, who try to make portraits or other type of artistic photograph stress the mechanical side of photography so much that they neglect the art end, and consequently do not get a picture worth making."

He now has somebody to do the dark-room work, so all he does is pose the subjects and make the exposures. His 8x10 studio camera is equipped with a Voigtlander lens, and he usually uses it stopped down to *f*18. On the day he was interviewed, his holders were filled with Agfa Triple-S panchromatic film: he didn't know this, until he asked one of his men.

He makes all his portraits on panchromatic film, and always uses a small stop. Since his pictures are intended for publication, they must be sharp and snappy. No fuzzy prints for him.

The exposure that Jackson gives is another thing about which he worries little, because it is a matter of instinct or reflex action with him. He uses a bulb, pressing it to open the shutter as he raises his arm upward, releasing it to close the shutter on the down-beat. The exposure sounds as if it might be somewhere around one-fifth second. Jackson uses conventional lighting units—floods, spots, etc.—to illuminate his subjects. He shifts these lights and the subject around to get the effects desired.

(Page 94, please)

NBC photographer Jackson was a pioneer in pictorializing the glamour of Dorothy Lamour (right). Fancy backgrounds such as this one are no longer used, because editors usually block them out.

Charlie McCarthy signs the World's Fair guest book, with Edgar Bergen helping, and Mayor LaGuardia and Grover Whalen looking on. An example of the work of a radio news-photographer.

Judy Canova dresses up for Jackson's camera.



Easy DIRECT copying

**Simple methods for rapid copying
with or without the use of a camera**

By **WALTER ENGSTROM**
Illustrated by the Author

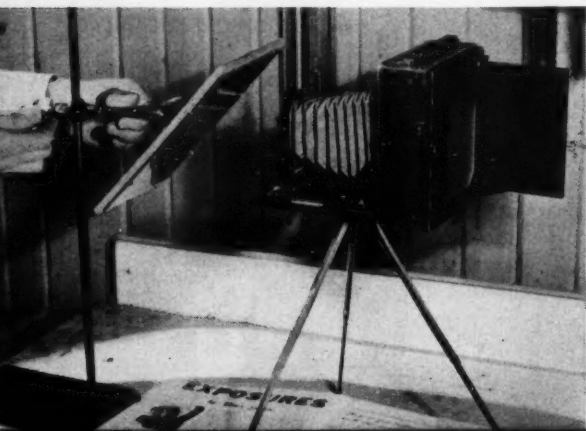
CAMERALESS copying requires no equipment but a few sheets of sensitized paper and developing materials. Use any enlarging bromide such as Velour Black or Brovira, in No. 4 or 5, or the contrastiest grade obtainable. In the dark-room, lay a piece of it on this page, with the sensitized side next to the printing. Clamp the page and paper in a printing frame or lay under a sheet of glass to insure good contact. Now expose to white light for a second or two, and develop in the usual way. If your exposure has been approximately correct, you will have a faithful but reversed or "mirror-image" reproduction of the printed page with light gray letters on a dark gray background. You can use this print as a negative for making a contact positive.

What happened was this: With this method, the exposure is not made through the printed page, but through the photographic paper. The light, striking the back of the sensitized paper, passed through the light sensitive emulsion to the printed

page. Wherever there was printer's ink, the light was largely absorbed, but where the paper was white, much of the light was reflected toward the emulsion. Thus areas of the sensitized paper over the dark printing received the least exposure to light.

It is easy to copy originals such as letters which are printed on one side only. The printed sheet is used exactly like a negative in ordinary printing. It should be reasonably transparent. Treatment of the original with a transparentizer such as castor oil or xylol will improve the contrast. Xylol has the advantage of evaporating within a few minutes after use, without damaging the original unless it contains ink made of greasy pigments soluble in xylol.

Cameraless copying, once the knack of giving proper exposure is acquired, is surprisingly simple and time saving. Carry development to completion, in order to get contrast. In making mirror-image negatives, a slight over-exposure followed by full development will improve the printing quality when positives are made. Such negatives, when viewed like



Camera and mirror arranged for making reversed copies on enlarging paper (similar to photostat). The mirror, of plate glass, came from a dollar store. A chemical ring stand is used as a support.

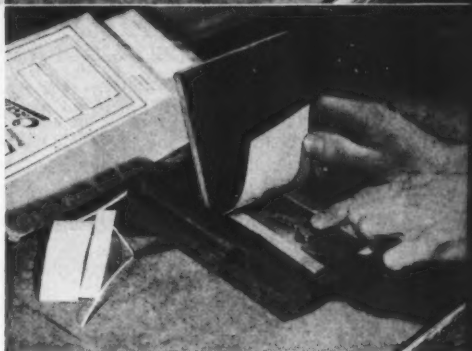
prints,
but w
have g
judge
as if t
You
particu
paper
develo
hypo
water,
a chro
other m
to rem
metal
stove.
three
piece o
be laid
to heat
the pa
ready
other m
bromid
(contact



Cameraless copying of material printed on both sides (above). Light passes first through the sensitized paper and is differentially reflected by the printed matter to be copied.



Inserting bromide paper into cut-film holder for use, instead of film, in copying. Bromide (enlarging) paper is used. Chloride (contact printing) paper also may be used but requires much longer exposure. For roll film cameras, paper is easily cut into strips in the darkroom and wound on a regular film reel.



Solid objects, such as a key (right) may be photographed in silhouette. When a printing frame is not desirable as when copying bound books, magazines, etc., a sheet of glass is sufficient to hold the subject flat under the sensitive paper.

prints, appear hopelessly flat and dense; but when seen by transmitted light, they have good contrast. So the only way to judge them is by handling them exactly as if they were on a transparent base.

You can speed up the copying process, particularly if a special cameraless copy paper is used, by forced drying. After development, fix the paper negative in hypo for a few minutes, wash it in clear water, and then lay it, image side up, on a chromium ferrotype plate or a piece of other metal that is smooth and clean. Blot to remove excess water, and warm the metal plate over a gas burner or electric stove. The paper will dry in two or three minutes. To prevent curling, a piece of cloth, such as a linen towel, can be laid over the negative. Be careful not to heat the plate so hot that it will scorch the paper. The paper negative is now ready to be printed by contact like any other negative. Use a contrasty grade of bromide enlarging or the slower chloride (contact) paper for the positive.

Cameraless copying is useful in keeping records of important papers; copying tables, articles, and even pictures from the printed pages of books, newspapers, and magazines for later reference; and for making copies of invitations, club notices and bulletins.

But there are times when a more flexible method of photographic note-keeping is desirable. With a camera of fair size, say $2\frac{1}{4} \times 3\frac{1}{4}$ or larger, the paper-negative process can be expanded. A camera equipped with a bellows that can be racked out is desirable. This permits copies to be made either smaller or larger than the original.

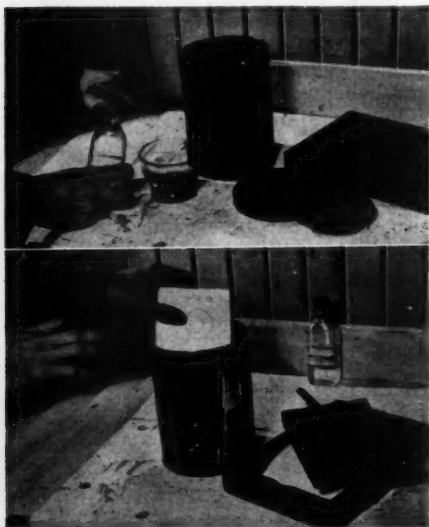
The simplest way of making a paper negative in a camera is to load the film or plate holder with bromide enlarging paper of contrast or extra contrast grade, and expose as if it were a regular negative. If the camera takes roll film, the paper can be cut and rolled just like the film. Determine the exposure by making tests. You probably will be surprised to find that you can give exposures of a few

seconds, or as short as those employed for moderately fast color-blind film.

Paper negatives made in this way will be mirror-image copies, with the blacks and whites reversed. For occasional reference, they can be filed away and read with the aid of a mirror, or by holding them between the eyes and a strong light. Usually, however, it is desirable to make positive prints. Contact printing is the best method, although it is not impossible to make enlargements from paper negatives when a powerful enlarger is used. If you are going to make only the negative copy and read it with a mirror, shorten the exposure and increase the development, to give maximum contrast without too much density. If you intend to make positive prints, give a longer exposure, and full development, to produce a better image by transmitted light.

To eliminate the reversal of the negative copy, and the necessity of using a

Diazo type paper (Ozalid) can be developed in an improvised ammonia chamber like this one. Liquid ammonia is poured into the glass container, which is set on the bottom of the large can. For small sized prints, the wire screen disc is laid over the dish to keep the paper from the ammonia. Larger sheets can be curved around the inside of the can, with the wire screen removed. A teaspoonful of ammonia will develop several prints.



Removing a print from the ammonia chamber, which is in this case an empty 5-lb. sodium sulphite can of the type found in photo darkrooms. Automatic printers and developers are used in commercial work.

mirror or making a positive print in order to read it easily, the image can be reversed before it enters the camera by means of a right-angle prism or mirror placed in front of the lens. Prisms suitable for this purpose usually are costly but very good work can be done with a ten-cent store mirror. Strictly speaking, a first-surface mirror should be used, to eliminate the secondary reflection produced by the front surface of back-coated mirrors. A first-surface mirror measuring about 3x5 inches costs \$2.50. Such a mirror probably is worthwhile if much copy work is to be done, but the amateur can get along with an ordinary vanity-case mirror costing a dime or so. Select one free from distortion, and with uniform silvering. Thin plate glass is best. The surface reflection from such a mirror, while noticeable to the eye and visible on the ground glass, will not register enough to cause trouble on bromide paper while the image produced by the silvered surface is being photographed.

Mount the mirror in front of the lens, and at an exact 45-degree angle to the lens axis. This means that the matter to be copied will be placed at one side, at right angles to the way the camera is pointing. Place the mirror as close to the lens as possible without cutting off any of the image. The farther the mirror is from the lens, the larger it must be. Experiments will indicate the best size, but generally it is better to have a mirror too big than one too small.

Bromide enlarging or similar paper is employed for such copy work because of its cheapness in comparison with films or plates. However, for the best work, where duplicate copies of a highly faithful and accurate nature are desired, copying on film in the conventional manner is preferable. When any quantity of direct copying is to be done, diazo paper can be used. The Ozalid Corp. (354 Fourth Ave., New York City) list these advantages of Ozalid paper:

First, direct positive printing—producing prints with a white background and without the aid

(Page 90, please)

Ua

TH
la
lig

quality
skyligh
lamps
standing
photog
source.
free fro
glare of
or arc li
raphers
the lon
lamps (C
the fact
sumption
rent is v
value of
much gr
There
limitatio
the Flu
does not

Lighting for
Notice how
ent light u
while the sp
at grea

Using SPOTS with FLUORESCENT LIGHTING

By GENE KORNMAN and FRANK POWOLNY
Twentieth Century-Fox Studios

THE Fluorescent lamp produces a light similar in quality to the old north skylight. Fluorescent lamps have many outstanding advantages as a photographic lighting source. They are cool and free from the disturbing glare of the incandescent or arc lights. All photographers will appreciate the long life of these lamps (2,000 hours) and the fact that their consumption of electric current is very low. Actinic value of the light is also much greater per watt.

There are, of course, limitations to the use of the Fluorescent unit. It does not have the carry-



Lighting for the portrait above. Notice how close the fluorescent light unit is to the model while the spotlights are placed at greater distances.



ing power of the tungsten filament or arc equipment. This must be recognized by the photographer, and, for this reason, the lights must be used closer to the subject.

There is a great difference between various Fluorescent units. Many of them must be used within two or three feet of the subject. The unit illustrated in the accompanying photograph can be used at a distance of five or six feet. This particular lamp has another advantage in that the stand is

(Page 100, please)

P A T T E R N S



THERE is as much an art to seeing photographic patterns as there is to seeing beauty in the commonplace. The raw materials are everywhere at hand—in the arrangement of flowers on a stem, the veining of a leaf, the play of sunlight on the snow, the shadows cast by a picket fence, or the rain-glazed cob-

blestone street. But the completed picture is more than a snapshot of any of these things, for it is the photographer's interpretation of his subject. Passable pictures of people and objects are merely a matter of a snapshot well exposed and properly developed and printed. Pattern pictures are not records but the product of a

EVERYWHERE

***Patterns abound in the structure, forms, placing,
and arrangement of everyday things. Look
around — there are patterns at your feet***

By F. BERKO
Illustrated by the Author



1. All-over pattern.
Leica IIIa camera,
Super X film, f6.3,
1/100th second.

2. Contra-light accented
the pattern in the ar-
rangement of these wet
cobblestones along the
Seine embankment.
Leica IIIa camera,
Super X film, f9, 1/40th.



3. Combination of spot and all-over patterns. Leica IIIa camera, Super X film, f/6.3, 1/60th second.

creative mind which can find satisfying beauty in the *arrangement* of simple materials.

The word "pattern" means different things to different people—to the dress-maker it is a tissue plan for cutting a dress or coat; to the foundryman it is the model from which the mold is made; to the artist it is ornament in repetition. Any form whether it be a cube, a nail, or an abstract design, if repeated at regular intervals, will form a pattern just as surely as recurrent sounds give rhythm or cadence.

Pattern is found, however, even where the forms are neither identical nor yet recurring at set intervals. Dandelions make a pattern on the lawn just as do the pebbles on the path, the leafless twigs of a tree against the sky, and the sands ribbed with wind-woven devices.

Regular repetition of a form or forms produces a stylized or *formal* pattern. The

casual occurrence of parts, with which the photographer is chiefly concerned, will often produce an informal pattern, but they are not considered complete until they are repeated. The bricks in Fig. 1 form a pattern in themselves, since they are forms repeated at regular intervals, but one section of the walk, i. e., a group of bricks surrounded by the white strips of cement is not a pattern but a unit which, when repeated, forms a pattern. The two figures form a unit which, if repeated, would likewise form a pattern. The entire picture could also be considered a unit for a pattern on a larger scale.

In looking for patterns the photographer will find it helpful to know something about their structure. The unit or units of the pattern may be anything, but the order of repetition determines the pattern and its effect.

The simplest of patterns is the *stripe* which consists of a series of parallel lines running in one direction. The interest in striped patterns depends upon the spacing and relative proportions of the widths of the bands. *Cross stripes* as in Fig. 6 vary such a pattern.

Spot patterns are probably the most versatile, since a wide range of effects can be obtained with them by close or wide distribution of the units and by contrasting large units with small to relieve the monotony. Stiff forms can be combined with flowing and the floral with the geometric as in Fig. 8. Even the deliberate repetition of the same unit with its monotony can be effective. Its success, as in all types of patterns, depends upon the distribution and the charm and character of its details.

In an *all-over pattern*, Figs. 1, 2, and 4, the design is connected and can be re-

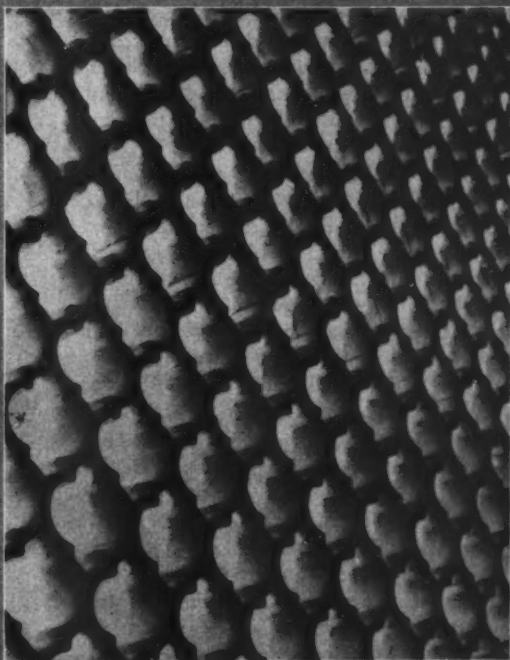
peated indefinitely in all directions.

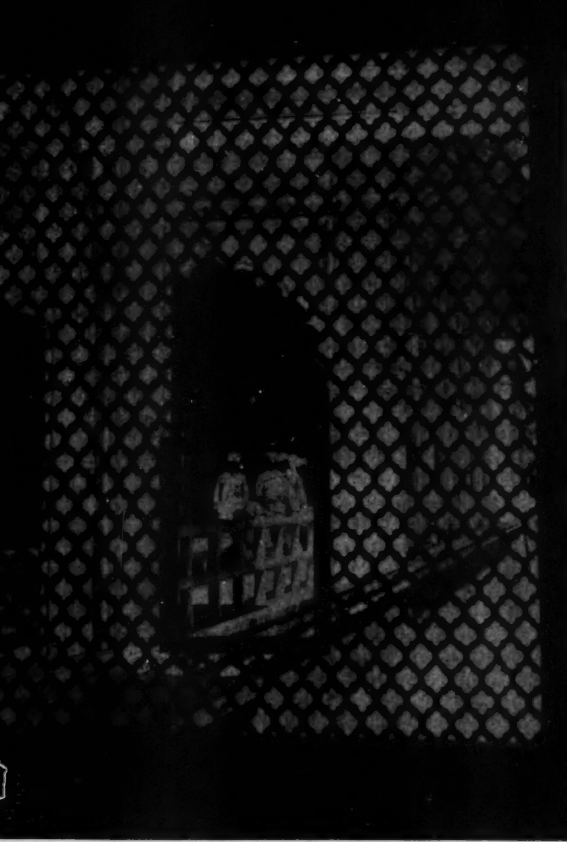
A *counter change pattern* is composed of a series of identical figures which fit into one another exactly but are alternately of different colors or tones. The best example of this is the chessboard.

Different types of pattern can be combined effectively. In Fig. 3 spots (the doorways with people in them) are combined with an all-over, cross-line pattern.

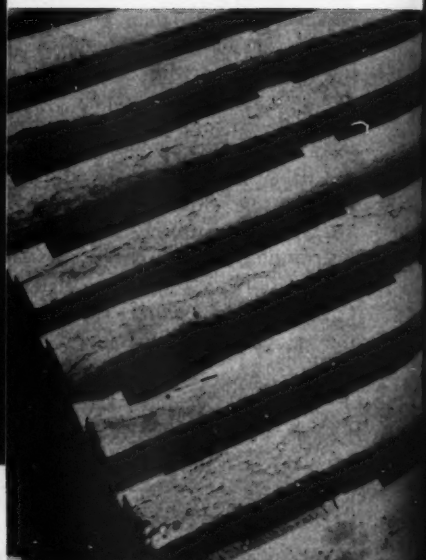
The designer has an advantage over the photographer in the control of his pattern. He can combine any units or groups of units in any arrangement which pleases him. He can adjust his colors or tones to suit his needs, and he is not troubled by perspective or lighting. The photographer, on the other hand, is limited by the subjects available, the lighting and perspective. His patterns, therefore, will be free—less formalized, except where controllable still life is used. An endless suc-

4. All-over pattern. Leica IIIa camera, Super X film, f4.5, 1/30th second.





5. (Left) Pattern serves to break up the uninteresting part of the picture while centering the attention on the subject. Leica IIIa camera, Super X film, $f/6.3$, $1/60$ th second.



6. Stripe pattern (top) modified with cross stripes. Leica IIIa camera, Super X film. Exposure $f/6.3$, $1/60$ th second.

7. All-over pattern (bottom). Leica IIIa camera, Super X film, $f/6.3$, $1/60$ th.

cession of patterns can be arranged and photographed using sugar cubes, matches, flowers, leaves, toy soldiers, airplanes, and a multitude of odds and ends found around a home or in the five-and-ten cent store.

Backgrounds, lighting, and arrangement are more important than the objects themselves. Sugar cubes, for example, can be placed in rows on a black background, flat lighted, and they will be nothing more nor less than white squares on black; but lay them on a light paper and cross light them so that they cast heavy shadows and the result will be an effective pattern.

Backgrounds can cause the photographer a great deal of grief while making pattern shots out of doors. Too often it is not possible to clear out the debris—whether it be tin cans or a few extra leaves. Such problems call the photographer's ingenuity into play. Perhaps another camera angle will eliminate unwanted material, or the leaves can be picked off (if the tree isn't too high).

Som
peda
cutti
can
prin
Fi
For
wood
may
the
are
Use
the
a d
Whe
grou
relat
up c

Some annoying backgrounds can be soft-pedaled by opening up the lens and thus cutting down the depth of focus. Others can be eliminated by cropping when the print is made.

Filters often will emphasize pattern. For example, a row of wind-bleached wooden shacks against a light blue sky may not make an interesting shot because the grey values of the sky and the shacks are too close in a black and white shot. Use a light or medium red filter and the repetition of stark buildings against a dark sky may be extremely effective. Whenever a subject with a sky background is photographed, consider the relative values and use a filter to build up contrasts.

The photographer has little control over the majority of pattern subjects. The parts are prearranged leaving him to compose them as he can in his viewfinder. The success or failure of a pattern picture lies in the photographer's elimination of extraneous detail. The art of pattern lies in expressing oneself within given bounds—of finding a few cobblestones or bricks which can be photographed as a pleasing pattern rather than trying to include the whole street. Someone has described pattern as "something not all ours which we find and make our own." A pattern shot is just that, since it represents the photographer's choice of material, angle, lighting, and his ability to exclude unimportant material.

8. Spot pattern combining geometric (iron-work and bench) with floral designs. Leica IIIa camera, Super X film, f6.3, 1/40th.





Meloy Brothers solve problems of producing photo-murals on big-business scale

Blowing

FOUR years ago two brothers in a small town near Indianapolis were losing their financial shirt-tails in a silk screen process making those large "standees" and cut-outs you see in front of theaters advertising various pictures.

They had more orders than they could fill and they were unhappy every time they got another order, for the majority of them resulted in a loss to the hard-pressed brothers.

Photography pulled these brothers from the brink of bankruptcy and sent them sailing from a one-man darkroom to a three-story building in which they employ 23 persons.

It started when Joe and Paul Meloy, now 42 and 44 respectively, sat down at a table and agreed not to get up until they had decided what to do with their white elephant business. They knew there was a big demand for moving picture advertisements—window cards, one, two

and three sheets and the standees. But the silk screen process was too expensive to allow the Meloy to meet the prices of their competitors who used lithography and linoleum block printing. It was draining the Meloy finances because, in order to get the business, they were forced to shade prices too much.

Weary after several hours of fruitless discussion, they decided to abandon the work and devote themselves solely to operating their small theater in their home town of Shelbyville, Ind.

Suddenly Joe said, "Would photography work? . . . Could we enlarge pictures to the big size we need, then have cuts made?"

They put the question to a photographer. He told them that "it might work." Immediately the Meloy's hired a darkroom man and gave him a small cubicle in which to work. Experiments indicated it certainly would work and the

Meloy's

From
Meloy's
enlarger
their w
of it in
manufa
store w
murals.

With
have, th
to 18 b
done by
copying
5x7 inch
called o
can do
been en
15 by 30

But th
tive to 6
a magni
it witho



1. Photomurals make attractive wall decorations for modern clubs, offices, and homes.

By **HAMLIN WELLING**

'Em Up BIG!

Meloy plunged head-first into it.

From that inauspicious beginning the Meloy jumped into bigger and bigger enlargements until now the lesser part of their work is for theaters. They do most of it in making huge backgrounds for manufacturers' exhibits, large department store window displays and gigantic wall murals.

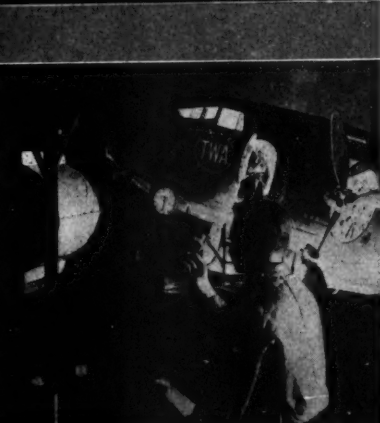
With the big projector the Meloy now have, they can enlarge a 35 mm. negative to 18 by 40 feet. This would have to be done by making a 5x7-inch enlargement, copying it, then printing the resulting 5x7 inch negative. They haven't yet been called on for a mural that large, but they can do it. To date their biggest job has been enlarging a 5x7 inch negative to 15 by 30 feet.

But they have blown up a 35 mm. negative to 6 feet 8 inches by 9 feet 4 inches, a magnification of 7,168 times. They did it without copying, that is, shooting di-

rectly through the 35 mm. negative. This was made for Agfa Ansco's exhibit in the New York World's Fair. It was a scenic view of mountains, trees and sky.

In the three years the Meloy have been in photography, they have discovered that available equipment, especially projectors, was not suited to their needs because rapid production was not possible. So they designed and built their own projectors, which they claim give off less heat, result in less negative distortion, are easier to handle and give a more even distribution of light.

They built one projector for routine work and the other for huge enlargements. To avoid vibration, they hung the smaller projector from the ceiling. They only use the big projector in the dead of night when auto and train traffic is greatly reduced. This is essential as some of their exposures run as long as a half hour when extensive dodging must be done.



Both of the projectors are alike in construction except in size and in that the big one rolls on the floor. The Meloy's built them out of angle iron, forgings made to their own pattern and cast in a local foundry, leatherette (an imitation leather) for the bellows, and a steel lamp housing. The smaller one has a Zeiss, *f*4.5 flat-field projection lens while the larger uses a Bausch and Lomb Tessar, *f*4.5.

The smaller projector takes, without adapters, 5x7-inch negatives and is capable of blowing them up to 8 by 14 feet. With adapters any smaller size film can be used. The big one, without an adapter, was built for 8x10-inch negatives but it also can accommodate any smaller size when an adapter is used.

Now let's watch an order as it goes through the Meloy's shop. Either a print or a negative is usually sent in with the order. The Meloy's maintain a large, classified stock of general pictures—scenic views, industrial shots, etc., and sometimes the customer will call for one of these. In this case let's assume the print is a five by seven inch. It is a man in a palm beach suit talking to a girl, planned to be an 8 by 10 foot wall mural for the men's shop in a department store.

The print first is copied onto a 5x7-inch negative. Preliminary examination will reveal whether dodging will be necessary to obtain a balanced negative. Now for the blow-up.

Previous experience gives them an idea of the exposure time necessary. They decide on what exposure to use, then test it by placing five small strips in the corners and center of the proposed

2. Copying a positive in order to obtain a better and a larger negative. (Top of page.)

3. Two special home-made projectors were devised by the Meloy brothers to make huge enlargements possible. Here an operator is projecting a 5" x 7" negative for a TWA mural.

4. After the print is developed it is mounted on canvas, plywood, board, or directly on the wall surface it was designed for. Here a workman smooths out a print just mounted. After mounting, the mural is placed in jigs or presses to prevent warping or curvature.

5. When a mural has been mounted and dried thoroughly it is retouched. Here are two artists working on small enlargements. Refoucher often must use ladders when finishing large photo murals.

enlarg
strips
posur
say t
at f16

If
thumb
ing p
yards
In pla
lapped

Wh
one b
tanks.
struct
dling
velope
must
after t

All
within
been r
lutely
develo
Other
some s
parison
The
print.

7. A
ladder
11'x18
used
play

6. The Meloy brothers' collection of negatives includes almost every subject which any advertiser would need whether it is models on the bench or a skier skimming down a mountainside.



enlargement image. Development of these strips will prove whether the proposed exposure time is correct. In this case, let's say they decide to expose 30 seconds at f16, using a 1,100-watt lamp.

If the test turns out all right, they thumb-tack to the wall the strips of printing paper. These come in rolls of 100 yards and are either 40 or 50 inches wide. In placing them up the strips are overlapped slightly.

When the exposure is made, the strips, one by one, are sent to the developing tanks. These are 36" x 56" x 12", constructed of cypress wood. Special handling must see that each strip hits the developer evenly and the end of each one must be submerged within 30 seconds after the first part of the strip goes in.

All the strips must be in the developer within 30 minutes after the exposure has been made. The operators must be absolutely sure that all strips remain in the developer for exactly the same time. Otherwise, there will be a variance, with some strips being over-developed in comparison with others.

The strips are developed as any other print. Following the wash, the prints are

ready to be mounted on canvas, plywood, compo-board, wood, or directly on a wall surface. The mount, to avoid curvature or warpage, is placed in jigs or presses and allowed to dry slowly.

After the print dries, hand colorists, who use air and camel's-hair brushes, swabs, stumps, or whatever instrument needed, touch up the uncolored print.

In their developing tanks, the Meloy's confine themselves to using metol hydroquinone developer. The hypo is a standard mixture with glacial acetic acid hardener.

Paper used for printing arrives in rolls of 100-yard lengths. The Agfa Brovira is 40" wide and the Gevaert is 50". These are the two papers the Meloy's use.

If it is necessary to copy a color print, either filters or color sensitive negatives must be used to reproduce the various densities of tone in their proper relationship. Otherwise, common commercial film is used.

The Meloy's have shipped murals to many points on the globe, including New Zealand, Japan, Paris, Havana, the Philippines, and several South American cities.

7. Artists had to use ladders to color this 11'x18' enlargement used for window display in a department store.



Behind the NEWS CAMERA

By A. J. EZICKSON

MINIATURE camera devotees among the newspix shooters in Manhattan include, on the *N. Y. Daily News*, Walter Engels, Joe Costa, Charley Hoff and Eddie Jackson. Alan Fisher of the *World-Telegram* finds the Ikoflex 2¼" x 2¼" a handy instrument for his superb shots. Dick Sarno of the *Mirror* sticks by the Contax. At the *Sun*, Anthony Lanza swears by the Exakta. Jack Layer gets a swell play in the *Journal-American* daily pages with his Contax pix, and also at the *Mirror*, Leo Lieb uses both a Contax and a Super Ikonta B to get his page-one superbs.



News shooters wearing high hats and gardenias in their lapels—identifying emblems of the Grand Mogul of the New York's *World Fair*—met Grover Whalen on his return from Europe. "Swell stunt, boys," he warmly commented. George Peck, the ship line's publicity director, had fathered the brilliant idea for the top gear and boutonnieres.

Pickups with the newspix: Leonard Wohlfell, former Wide World manager in London, recently returned and stated flashlight pix from abroad will soon reach low ebb, due to fact that many factories making flashbulbs are being converted into munition plants . . . Frank Muto, International foreign ace, is sending back much horror stuff and closeups of the Finns on the advance, has had many narrow escapes from the Soviet bombings in Helsinki . . . Mike Ackerman, Acme veteran, stopped his car on a Jersey road the other day to give Mayor Fiorello LaGuardia of New York a pickup. The Mayor's car had broken

down, and Mike spotted Fiorello's thumb signal . . . Sammy Falk of Wide World paused long enough on his Florida vacation to make a layout of fish pictures at the Marine Studios Oceanarium at Marineland, and see them hit the rotogravures' page-one the country over, and hopes to capture top prize in several news picture contests with the same . . . Which goes to prove that a good news photog will spot them wherever he goes.

Score nice scoop for Arthur Brower, Wide World photographer, at the Toronto Maple Leafs-New York Rangers hockey game at Madison Square Garden—the only news photog



to secure a shot of a short-lived but spirited scrap in which the opposing players exchanged many a blow. Brower, using an Ernemann f.8 camera, was on the 49th Street

side of the arena, with his camera focused on the action at the cage, when the players suddenly swept to within five feet of where he was sitting. When the fight broke out, Brower hopped over the railing, slid over the ice, focused the fray and snapped two swell shots before the fight stopped as suddenly as it started. Other lensmen, coming on the run from the 50th Street side, were too late. Young Brower's news picture of the night got a page-one display. The photog got a scraped shinbone.

The arrival of the U. S. Cruiser Tuscaloosa with 578 members of the crew, of the scuttled German liner Columbus was a red-letter event for Manhattan's picture gatherers. For 24 hours following the flash that the crew had deserted the burning ship 450 miles off Cape May, N. J., the New York offices of the four major picture agencies, Wide World, Associated Press, Acme and International were beehives of activity. Special tugs were chartered to meet the American warship in lower New York bay. Weather permitting, planes were



Crew films sinking liner.

hired for the aerial shots. With no advance information as to where the cruiser would dock, photographers were assigned to every possible vantage point: Staten Island, Ellis Island, Brooklyn Navy Yard. Others were sent to the Seamen's Institute in event the Columbus' crew would

(Page 100, please)

The MACHINE GUN Camera

By DR. OTTO BETTMANN
Illustrations from the Bettmann Archives

THE amateur photographer, not satisfied with gentle "picture-taking," speaks of "shooting," and "shots," and "blow-ups." No wonder that a photographer's fertile brain devised a photographic gun.

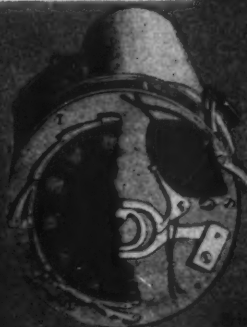
In 1882 a workable photographic gun was invented by Etienne Jules Marrey, a student of the motions of men and animals. Marrey found that the camera in his equipment was not constructed to suit his purposes, for it was difficult to bring moving subjects into the field of the camera. Marrey devised an instrument that facilitated the taking of successive, instantaneous exposures of objects in motion.

This implement was a very large revolver with a stock supported by a man's shoulder.

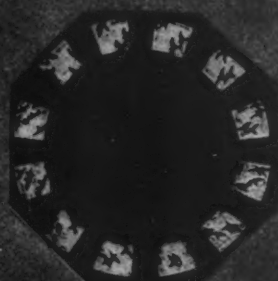
The barrel was a telescope in effect, containing the camera lenses. There were twelve
(Page 103, please)



The barrel of the gun (above) contained the camera lens. An instantaneous film (below) was placed behind the aperture in the shutter.



This is a photograph taken with Marrey's photographic gun.



This made from a negative, shows the chamber revolved once.

being



CRITICAL



MAMMY. Robot camera, Panchromatic film, $f/16$, $1/25$ th second.

"MAMMY" is an interesting snapshot, but in the hands of a proficient darkroom worker it could be transformed into a print of salon quality. Cropping the picture as indicated will greatly improve its composition. Local projection control should be exercised so that the area below the ear and around the neck does not become too black while the white area around the face should be shaded so that it gradually blends into a darker tone in the upper right-hand corner. If possible the entire white background should be darkened somewhat. The hair area can also be toned down a little as it is too sharp and attention-arresting as it is.

The shading of the background can be taken care of either by projection control or, if the photographer is really ambitious, by using the paper negative process. Since this picture was taken in the open air with the sky as a background, the use of a medium yellow filter would have darkened the sky and saved considerable work. Corrections which are made before pictures are exposed require little extra thought at the time, but pay many times over in darkroom time saved.

The small patch of white dress which has purposely been left inside the crop marks in the lower left hand corner must also be darkened. It is a disturbing influence as it is but it should not be entirely cropped off, for the indication of a white dress, small as it is, lightens the tone of the entire picture. This area also helps to balance the light tone of the upper right-hand corner. This type of picture always shows to advantage on a buff paper of interesting texture which has been toned to a warm brown.

THE person who made "MARBLES" knows as well as anyone that the feet and legs of the boys in the foreground should not have been cut off. Either haste or parallax must be responsible. If the former, take the camera out a few times without any film in it and spend an afternoon sighting objects and shooting them quickly until accuracy is not sacrificed to speed. If the latter, experiment until you know exactly how much to allow for parallax.

The boys in this picture are playing marbles. Why not show the marbles? They would give the picture a focal point or center of interest around which the action revolves. The colored boy in the center of the picture, looking at the camera, divides the picture in two and destroys all the atmosphere which the shot might otherwise have.



MARBLES. Argus camera, Agfa Ultra-Speed Panchromatic film, $f/8$, $1/300$ th second.

a



A NE
MAK



1 Slip in
sensit
paper.

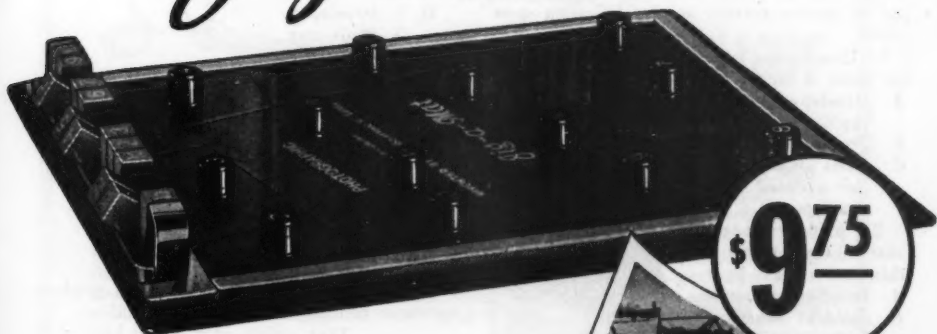
Now
photo
Argus J
at a tim
tion exp
posing v
form of
bination
masking
use it. C

• Write us

argus ANNOUNCES THE

Jig-A-Mat

REGISTERED TRADE MARK



\$9⁷⁵

A NEW AND EASY WAY TO MAKE PHOTOMONTAGES



1 Slip in the sensitized paper.

2 Expose the section you want to print.

3 Depress the numbered record lever.

Now anyone can make excellent photomontages . . . easily! The Argus Jig-A-Mat exposes one section at a time. Keeps a record of each section exposed. Test *your* skill at composing with this exciting, dramatic form of photography. Over 4,000 combinations possible! Makes a fine 8x10 masking easel. Be among the first to use it. Costs you only \$9⁷⁵

• Write us for information or see your local dealer.



Over 4,000 Com-
binations Possible. Makes
a Splendid 8x10 Masking Easel

International Research Corporation
332 Fourth Street, Ann Arbor, Michigan

Please send me further information on the
Argus Jig-A-Mat.

Name _____

Address _____

K A M E R A -

Kwiz

TEST YOUR KNOWLEDGE OF PHOTOGRAPHY—THEN SEE ANSWERS AT END OF QUIZ

By VICTOR H. WASSON

WHAT do you know about *developing* and what are your questions on this all-important subject? Check your answers and see if you can do better than the average of six out of twelve correct on the following questions.

1. Usually the time of development given for tanks is longer than for trays. Why?

- A. *Developers oxidize rapidly in a tray.*
- B. *Tray holds more.*
- C. *Films usually are better agitated in tray development.*

2. A faulty negative that always prints like this, was caused by:

- A. *Insufficient agitation.*
- B. *Sudden changes in temperature.*
- C. *Stale Hypo.*
- D. *Films not properly separated during development.*



3. If you wanted fine grain negatives but had to choose one of the following combinations, which would you take?

- A. *A slow, fine film and an ordinary developer?*
- B. *A coarse, fast film and fine grain developer.*
- C. *It's a bad habit, but some of us smoke in the darkroom. What is the main objection?*

- A. *Contamination of solutions from tobacco fumes.*
- B. *Definition in enlargements may be lessened.*
- C. *Smoke gets in your eyes.*

5. What is the earliest stage of the developing process at which films may be safely examined under ordinary light?

- A. *Just after development.*
- B. *While in the short stop.*
- C. *As soon as it is in the Hypo.*
- D. *After five minutes in the Hypo.*

6. If you were called away from your work and wanted to bottle your chemicals for an hour or so, in which order would you siphon them through the same tube so as not to contaminate the solutions?

- A. *1. Hypo*
- B. *2. Developer*
- C. *3. Short stop*

- B. *1. Short stop*
- C. *2. Developer*
- D. *3. Hypo*

- C. *1. Hypo*
- D. *2. Short stop*
- E. *3. Developer*

- D. *1. Developer*
- E. *2. Short stop*
- F. *3. Hypo*

7. Two of the following are different names for the same chemical. Which are duplicates?

- Mercuric Sulphide*
- Sodium tetraborate*
- Mercuric Chloride*
- Calcium Fluoride*
- Corrosive Sublimate*
- Bismuth Subnitrate*

8. A. Overexposure is as likely to produce excessive contrast as overdevelopment.

True False

B. Once a glossy print is dry it is impractical to resoak and ferrotype it.

True False

C. If you put a kodachrome in your enlarger and made a print on bromide paper the result will resemble a negative rather than a positive.

True False

D. If, in compounding a formula that called for one ounce of sulphite, you accidentally put in two ounces, you could save the batch by doubling all the other quantities.

True False

9. While developing five and six prints at once to save time, one came out like this. The negative was perfect. What happened?

- A. *Two prints stuck together?*
- B. *It was only partially submerged when first immersed?*
- C. *Hypo splashed into the developer?*
- D. *Light struck?*



(Page 113, please)

spotlight news!



For the Wide-Awake Amateur Photographer who desires clear pictures with "professional" high-lighting.

A REAL SPOTLIGHT

WILLO No. 88 *Low priced! Efficient!*

It's sensational! Equips the amateur to do a really professional lighting job. Spotlight unit completely enclosed. Condensing Lens eliminates all light "spill" . . . giving high intensity to desired spot. Ideal with Dufaycolor and Kodachrome and black and whites.

Has all steel body construction to withstand extreme high heat of No. 1 Photo Flood Bulb or No. 212 General Electric photo enlarging bulb, in an enclosure and is finished in heat-proof black crackle with a chromium-plated pull chain socket. Complete with rubber cord, rubber plug **\$1.50** and heavy duty clamp

WILLO

H. R. Combination Tank

A light, deep lipped cover which permits use of white light while developing and a floating lid to protect solutions from evaporation and oxidation are supplied with the tank. Both cover and lid have large rubber knobs.

The tank is attractive yet solidly constructed of extra heavy moulded rubber, insuring life-long service. The material from which this tank is made is unaffected by even moderately high temperatures and of course, is acid and alkali proof.

\$4

COMPLETE



LARGE ENOUGH TO ACCOMMODATE

15	5 x 7	20	9x12cm.
20	4 x 5	20	3 1/4 x 4 1/4

DEVELOPING HANGERS

**WORLD'S
LARGEST
CAMERA
STORE**

Willoughbys

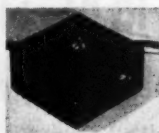
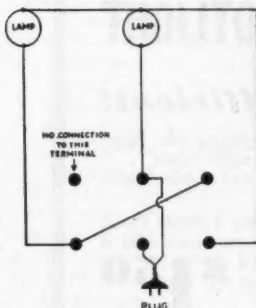
**MAIL
ORDERS
FILLED**

110 WEST 32ND ST., N. Y.

BUILD IT Yourself

Photoflood Dimmer

The life of photoflood lamps is greatly increased by a reduction in operating voltage. These lamps are most frequently used in pairs



Home-made series-parallel switch and wiring diagram. Any double-pole double-throw switch may be used.

and this fact readily lends itself to the construction of a simple dimmer.

This dimmer places the two lamps in series for one position of a switch, and in parallel for a second position of the switch. In the series connection, each lamp receives only half of the line voltage and its life is greatly increased. This connection is used while setting up, placing the lights and focusing. The reduced lighting is more comfortable to the subject during these preliminaries and incidentally the power consumed is only one-fourth of that for full brilliancy.

The materials required for constructing this dimmer may be purchased at most radio parts mailorder houses for about \$1.50. The parts used are a sheet metal box of a standard size—4"x4"x2", a double-pole, double-throw toggle switch, two plug receptacles, a rubber grommet to fit a one-half inch hole and a ten foot length of cord with a plug.

The switch is mounted centrally on the top face of the box in a one-half inch hole. The plug receptacles are of the type that mount in a 1/4" hole on a side face of the box. On the opposite side face of the box a one-half inch hole is drilled and the rubber grommet is placed in this hole to protect the line cord where it enters the box. The sheet metal box is of the type whose top and bottom faces are removable, so that assembly and wiring of the parts is readily accomplished. — A. C. DONOVAN.

Wide Angle Camera

This fixed-focus, wide-angle camera was made by building a box around a standard 8x10" plate back. The lens used is a B. & L. Zeiss Protar of 3 1/2" focal length obtained from a 5x7" camera.

The lens is permanently focused at 6 feet. At its maximum opening, f/18, the depth of focus is from 4 1/2 feet to 10 feet. At f/45 it is in sharp focus from 3 feet to infinity.

This type of camera is especially useful in tight places such as small rooms and always where a wide view is required and there is not



enough room to move the camera back far enough to take in all of the area or to get everything in sharp focus. The camera can be placed on a mantelpiece or against the wall. The viewfinder consists of three tacks in triangular form on the top of the camera. These tacks were placed after viewing a scene in the ground glass.

When there is not enough room to sight the camera from behind, it can be sighted from in front by looking along the two tacks, first along one angle and then along the other.

The covering power of this lens is almost enough for an 8x10" negative; 7x9" is covered with good definition. — Ralph Haburton.

EDWAL RESEARCH BRINGS YOU

THE FIRST
REAL Fine Grain
Developer at
LOW COST

EDWAL *Thermo Fine* TUBE DEVELOPER



Develop perfect negatives without paying a premium for fine grain. This new scientifically formulated developer gives you real fine grain at lower cost than ever before. Count its numerous advantages.

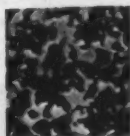
- Non-staining
- Non-toxic
- For use at 65° to 90°F.
- Complete control of contrast
- Normal exposure
- Full shadow-detail
- Physical action
- 15 to 20 diameter enlargements

Look at the Grain it Gives!

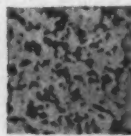
Edwal Thermo Fine produces finer grain than borax-type, finer grain than physical development and as fine as Edwal 12 at its best.

Each tube makes 1 quart of developer which can be used to develop 10 rolls of 35mm., 2¼"x3¼", or 2½"x4¼" films. Get Edwal Thermo Fine Developer today. You will find it the simplest of all to use. All you need is Edwal Thermo Fine and a fixer. No short stop bath is necessary. No technical details, no replenishers, no mathematical complexities. Ask your dealer for a tube today! Circular sent on request.

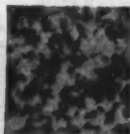
These photomicrographs (700 diameters) show the grain structure produced on DuPont Superior 35mm. film, enlarged to 700 diameters.



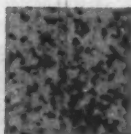
Borax Type
Developer



Edwal Thermo
Fine Tube
Developer



Physical
Developer



Edwal 12

THE EDWAL LABORATORIES, INC.

DEPT. 2-M, 732 FEDERAL STREET, CHICAGO, ILL.

IT'S A "SNAP" WITH SUPERFLASH!

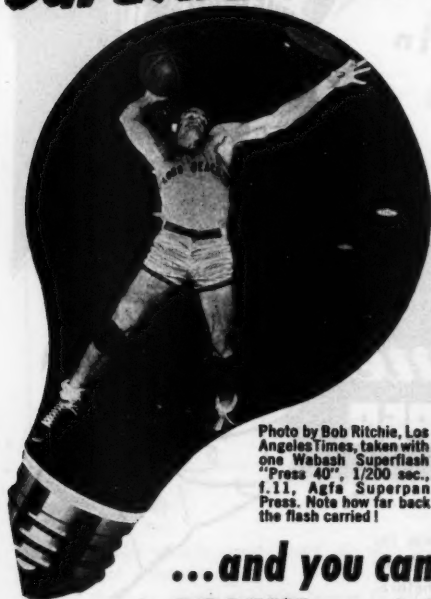


Photo by Bob Ritchie, Los Angeles Times, taken with one Wabash Superflash "Press 40", 1/200 sec., f.11, Agfa Superpan Press. Note how far back the flash carried!

...and you can
DEPEND on it!

Simple... Safe... Sure—that's what flash shooting's like with Superflash! Simple—because Superflash's extra powerful, extra long-peak light flash, perfectly synchronized, uniform and controlled—makes it easy to get pictures "on the nose"...cuts down exposure errors.

Safe—thanks to Superflash's lens-clear, double safety jackets, safety spot, safety disc and anti-contact flashing features.

Sure—because you can depend on Superflash... to flash, to synchronize, to protect, to do everything you'd expect of the world's leading flash bulb! See your dealer. Or write Wabash Photolamp Corp., Brooklyn, N. Y.



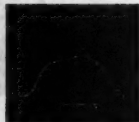
● INVISIBLE
SAFETY JACKETS



● CONTROLLED
UNIFORMITY



● PATENTED
SAFETY SPOT



● EXTRA LONG
PEAK FLASH

WABASH Superflash
AND WABASH SUPERFLOOD PHOTOLAMPS

Enlarging Timer

An efficient enlarging timer can be made from an ordinary pocket watch of the dollar variety. Remove the crystal, hour and minute hands. Glue a long, thin piece of balsa wood on top of the second hand so as to clear the dial and the winding stem. The second hand



The back view (center) shows how the card-board is folded and glued to form the support. The tilted position of the dial makes it easy to read from a standing position.



The upper snapshot shows the front view and how the watch is wound by the aid of the slot for the winding stem.



The face of the enlarger clock (bottom) also is made of mounting board. After inscribing the circle, it is laid off in 60 equal divisions, just as a watch or clock.

extension is made of a piece of balsa, the size of the diameter of the circle to be described. Cut off one fourth of this length and glue it back upon itself. This is to act as a counter-weight to make the clock run evenly both "up" and "down" the dial.

Glue the watch to the back side of the dial with collodion, over the circular hole, and then glue the thin piece of balsa in place on top of the second hand. Use as little glue as possible for this piece of balsa, as too much glue will stop the movement of the second hand.

—Jacques H. Upshaw.

35MM FILMS
FINE-GRAIN PROCESSED
ONLY \$1.50

OUR FINE QUALITY WORK ON DOUBLE WEIGHT PORTRAIT PAPER

Your 36-exposure rolls fine grain developed and each good negative enlarged to approximately 8 1/2 x 4 1/2 inches. Beautifully bright prints.

Our complete and prompt service only \$3.50. Send for free mailing bags.

MINICAM PHOTO LABS. Dept. 30, La Crosse, Wis.

26 Shots In One

A problem to phase any photographer, was the picturing of this machine which is nearly a block long. Because of the limited size of the building it was not possible to get far enough away to photograph the machine with a lens of even the widest angle.

The photographer did not resort to tricks. He simply took 26 separate pictures and put the prints together so expertly that it was impossible to tell from the complete print that it had not been photographed on a single negative.

The problems were (1) lighting (2) perspective. The machine was lighted so that every negative would show shadows in the same direction. Normal perspective was obtained by moving the camera between exposures in the form of a curve, a concave arc with the closest part nearest the center of the picture. This produced the effect of normal perspective when the 26 prints from the 26 negatives were pasted together. In pasting,

the sections were allowed to overlap and then cut with a razor blade.

The machine is one of the longest ever built for paper making, being 284 feet long. The complete photograph was accepted by Hummel & Downing Co., Milwaukee, as the best photographic reproduction of their machine that they had been able to obtain. The company would have spared no expense if another way of taking the picture had been possible.—*John E. Hubel.*

Proper Washing of Prints

The problem in washing prints is not wholly one of removing the hypo from the emulsion, as it is in washing films. It is also one of cleaning hypo from the baryta base coating beneath the emulsion.

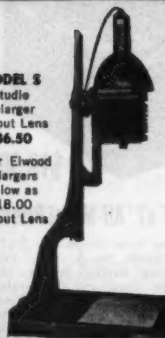
Agitation does not speed up the hypo removal from prints as it does with films. Soaking in frequent changes of water is almost as effective and swift. If a print washer is used, the prints should not be permitted to collect in bunches but should circulate sufficiently, so

Like the **WORLD'S LARGEST TELESCOPES**

ELWOOD ENLARGERS

MODEL S
Studio
Enlarger
without Lens
\$36.50

Other Elwood
Enlargers
as low as
\$18.00
without Lens

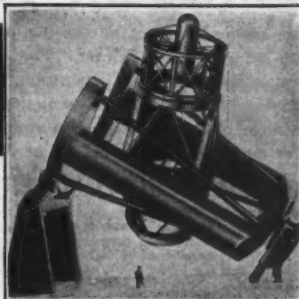


Use Polished Reflectors . . . For More Accurate Light Control

● For maximum illumination and brighter, sharper images, the world's largest telescopes —are of the reflecting type. Reflector telescopes gather many times more light and can be made many times more accurate than refractor telescopes.

For the same reason, Elwood Enlargers use silvered and polished reflectors. They are scientifically correct and reflect many times more light than a refractor light system. The image is illuminated evenly to the extreme corners because a reflector can be made the correct shape.

Only Elwood Enlargers have patented silvered reflectors. See them at your dealers or write for 76-page book now!



Model of the World's Largest Telescope, now being completed on Mt. Palomar, near San Diego, California. Note the size of man directly under the reflector. Observation Chamber is in extreme top above reflector and is 6 feet in diameter. It will reveal the mysteries of the universe 1,200,000,000 light years from the earth. This telescope will have a reflector 200 inches in diameter—twice as large as the biggest now in service in the Mt. Wilson observatory near Pasadena.

ELWOOD PATTERN WORKS, Inc.

DEPT. 13, 125 NORTH EAST STREET, INDIANAPOLIS, INDIANA

Canadian Agents and Distributors: W. E. Booth Company, Ltd., Toronto and Montreal

SALONS

Closing Date	Name of Salon	Number of Prints and Entry Fee		For Entry Blank, Write to
February 15	Fifth Annual National Salon, St. Petersburg Camera Club	4	\$1.00	Homer Agee, Salon Chairman, 105 Seventh St., So., St. Petersburg, Fla.
March 15	Third Salon of Photography, Camera Club of Fitchburg	4	\$0.50	Elsie L. Lowe, Secretary, Pearl Hill Rd., Fitchburg, Mass.
March 25	Second Annual Salon of Photography, Newport Camera Club	4	\$1.00	Secretary, Newport Camera Club, 41 Mary St., Newport, R. I.
April 1	First International Pictorial Roundup	4	\$1.00	Ben F. Marable, Business Mgr., Box 151, Cheyenne, Wyo.
April 8	1940 Baltimore International Salon of Photography	4	\$1.00	J. S. Rowan, Salon Secretary, 2315 Homewood Avenue, Baltimore, Md.
April 10	Seventh International Salon of Milwaukee	4 Prints, 6 Color Slides	\$1.00	A. P. Bellinghausen, Salon Chairman, c/o Milwaukee Art Institute, 772 N. Jefferson St., Milwaukee, Wis.
April 15	New Jersey National Salon of Photography, 1940	4	\$1.00	Salon Committee, Orange Camera Club, 1 South Clinton St., East Orange, N. J.
April 17	First Toledo International Photographic Salon	4	\$1.00	Carl F. Reusch, Salon Chairman, Toledo Museum of Art, Toledo, Ohio.

that they are constantly bathed with hypo-free water.

Don't overload your print washer by dumping in a whole evening's work at once. When you have a large number of prints the results will be more satisfactory if you wash only part of them at a time.

Double-weight paper retains hypo much longer than single-weight. Even under the most favorable conditions it's not safe to cut down the washing time to less than 30 minutes for single-weight paper or an hour for double-weight.

Don't mix unwashed prints, fresh from the hypo tray, with partially-washed prints. That adds fresh hypo to the water in the print washer and makes it necessary to start all over again and rewash all the prints for the full period.

If speed is important, washing time can be cut in half by use of a sodium carbonate solution. The acid in hypo retards the penetration of the water into the paper fibers, but if the acid is first neutralized the water can act more speedily.

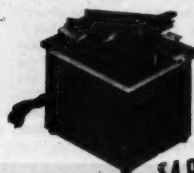
Make up a 1 per cent solution by dissolving

Fans! ALBERT PRINTERS Save

The keen enjoyment of turning out finest quality prints is yours with an ALBERT Printer. For quality results, trouble-free performance, economy of operation, Albert Printers are unequaled. They're 'way ahead in construction and appearance, too. There's a size or model best suited to your needs; feature for feature they offer more for your money. Let your dealer demonstrate.

ALBERT 4"x5" ALL-METAL PRINTER

Takes all film from 35mm. to 4"x5". Special film guides for uncut 35mm. film. Four steel masking bands. Hinged door for quick access to bulbs. Automatic off-on light control. Two sockets: one for white light, one for safelight. AC or DC. Attractive black enamel finish, nickel trim. Ruby bulb, cord and plug included. \$9.75 complete.



\$4.95

VICEROY 4"x5" RAPID PRINTER

All-metal construction. Takes all negatives to 4"x5". Adjustable masking bands. Dual purpose safelight. Many other modern features.



\$9.75

Send to Dept. B-7 for Full Facts

Money—Do Your Own Prints



\$18.50

Albert De Luxe 5"x7" All-Metal Printer

Takes any negative from 35mm. to 5"x7". Special guides for uncut 35mm. film. Four black metal masking bands, etched with white border guide lines and numerals—three sockets—Hinged metal door for easy access to ground glass for dodging and quick bulb removal. Automatic switch. AC or DC. Safelight, cord and plug included. \$18.50 complete.

ALBERT

1000 Broadway, Chicago

15 grains (1 gram) of anhydrous sodium carbonate in 34 oz. (1 liter) of water. Immerse prints a few at a time and for one minute only in this solution, then transfer them to the print washer. A stronger solution or a longer immersion may affect the whiteness of the paper.

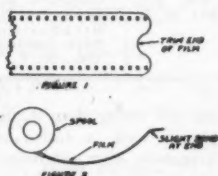
With this method, 10 to 15 minutes of washing is sufficient for single-weight prints, 20 to 30 minutes for double-weight.—Bruce Cole

35-mm. Developing Tanks

For successful developing of 35 mm. film in tanks, remember to:

1. Use the reel only when thoroughly dry.
2. Trim end of film as shown (Fig. 1). Do not cut through perforations.
3. Bend film in direction opposite to natural coil (Fig. 2).
4. Feed film from loaded spool to reel so that the natural coil of the film is unchanged.

—W. H. Knutz.



Write Articles To Sell Pix

While hunting for a print to go with an article already written one day, I ran onto all sorts of interesting but forgotten pictures. An idea struck me! Why not collect all the best pictures and write articles to fit them? Editors are picture-conscious, always demanding more and better photographs. Hadn't one recently informed me that it was useless to submit a manuscript without several Grade A illustrations?

In my usable collection was a group of waterfall pictures—pictures of large or unusual cataracts. The result was an article, "Waterfalls I Have Seen," which sold readily. Without the pix this piece would have been worthless.

Then I dug up some photographs of a pioneer parade of several years back. They showed pack burros laden with prospecting paraphernalia, covered wagons, painted Indians, etc.



These were also good for a salable article to a church publication for teen-age boys and girls. Pictures used for informative articles like this need not be new, such as spot news pictures, but must be of high quality.

Except for photos of a personal nature,

Great News for Serious Photographers

All Bee Bee Enlargers REDUCED!



THE Brooks organization is moving very soon to better but smaller quarters and simply will not have room to store its present stock of enlargers. To dispose of a large part of this valuable but bulky stock, prices have been reduced as much as 42% on some models. Your dealer will cooperate by showing you these famous enlargers or give you full details as to their construction and specifications as listed on pages 20 to 24 of the Burleigh Brooks catalogue. Here is a brief listing of the four models, showing former and new prices:

Bee Bee MODEL III ENLARGER, for negatives $6\frac{1}{2} \times 9$ cm. or smaller. Magnification about 6 diameters.* Completely equipped with $\frac{1}{4.5}$ anastigmat lens with diaphragm, 6x9 cm. metal mask, bulb and baseboard . . . formerly \$115.00, now only \$80.90

Bee Bee MODEL IV ENLARGER, for negatives 9×12 cm. or smaller. Magnification about 5 diameters. Complete with $\frac{3}{4}$ inch $\frac{1}{4.5}$ anastigmat lens with diaphragm, 9×12 metal mask, bulb and baseboard . . . formerly \$137.50, now only \$95.00

Bee Bee UNIVERSAL RAJAH "O" ENLARGER (shown above), for negatives 3×4 cm. and smaller, or sections of larger negatives. Magnification about 8 diameters on baseboard.* Complete with a 60 mm. Parastigmat $\frac{1}{4.5}$ special enlarging lens, click-locking diaphragm, single condenser, 75-watt bulb, two metal masks (3×4 cm. and 2×3 cm.) and baseboard . . . formerly \$32.50, now only \$32.50

Bee Bee RAJAFox "O" AUTOFOCUS ENLARGER, for negatives 4×4 cm. and smaller, or sections of larger negatives. Keeps automatically in focus for any picture within its range of 2 to $9\frac{1}{4}$ diameters. A beautifully constructed, easy-to-use instrument. Complete with 60 mm. Parastigmat $\frac{1}{4.5}$ lens with click-locking diaphragm double condenser, 75-watt bulb, cord, three metal masks (3×4 cm., 2×3 cm., and 4×4 cm.), baseboard and switch . . . formerly \$100.00, now only \$67.50

*Unlimited enlargement possible when housing is reversed.

If your dealer cannot supply you with full information, write:

BURLEIGH BROOKS
INCORPORATED
127 WEST 42ND STREET NEW YORK

SALONS

Closing Date	Name of Salon	Number of Prints and Entry Fee		For Entry Blank, Write to
February 15	Fifth Annual National Salon, St. Petersburg Camera Club	4	\$1.00	Homer Agee, Salon Chairman, 105 Seventh St., So., St. Petersburg, Fla.
March 15	Third Salon of Photography, Camera Club of Fitchburg	4	\$0.50	Elsie L. Lowe, Secretary, Pearl Hill Rd., Fitchburg, Mass.
March 25	Second Annual Salon of Photography, Newport Camera Club	4	\$1.00	Secretary, Newport Camera Club, 41 Mary St., Newport, R. I.
April 1	First International Pictorial Roundup	4	\$1.00	Ben F. Marable, Business Mgr., Box 151, Cheyenne, Wyo.
April 8	1940 Baltimore International Salon of Photography	4	\$1.00	J. S. Rowan, Salon Secretary, 2315 Homewood Avenue, Baltimore, Md.
April 10	Seventh International Salon of Milwaukee	4 Prints, 6 Color Slides	\$1.00	A. P. Bellinghausen, Salon Chairman, c/o Milwaukee Art Institute, 772 N. Jefferson St., Milwaukee, Wis.
April 15	New Jersey National Salon of Photography, 1940	4	\$1.00	Salon Committee, Orange Camera Club, 1 South Clinton St., East Orange, N. J.
April 17	First Toledo International Photographic Salon	4	\$1.00	Carl F. Reupsch, Salon Chairman, Toledo Museum of Art, Toledo, Ohio.

that they are constantly bathed with hypo-free water.

Don't overload your print washer by dumping in a whole evening's work at once. When you have a large number of prints the results will be more satisfactory if you wash only part of them at a time.

Double-weight paper retains hypo much longer than single-weight. Even under the most favorable conditions it's not safe to cut down the washing time to less than 30 minutes for single-weight paper or an hour for double-weight.

Don't mix unwashed prints, fresh from the hypo tray, with partially-washed prints. That adds fresh hypo to the water in the print washer and makes it necessary to start all over again and rewash all the prints for the full period.

If speed is important, washing time can be cut in half by use of a sodium carbonate solution. The acid in hypo retards the penetration of the water into the paper fibers, but if the acid is first neutralized the water can act more speedily.

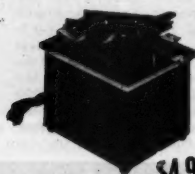
Make up a 1 per cent solution by dissolving

Fans! ALBERT PRINTERS Save

The keen enjoyment of turning out finest quality prints is yours with an ALBERT Printer. For quality results, trouble-free performance, economy of operation, Albert Printers are unequaled. They're 'way ahead in construction and appearance, too. There's a size or model best suited to your needs; feature for feature they offer more for your money. Let your dealer demonstrate.

ALBERT 4"x5" ALL-METAL PRINTER

Takes all film from 35mm. to 4"x5". Special film guides for uncut 35mm. film. Four steel masking bands. Hinged door for quick access to bulbs. Automatic off-on light control. Two sockets: one for white light, one for safelight. AC or DC. Attractive black enamel finish, nickel trim. Ruby bulb, cord and plug included. \$9.75 complete.



\$4.95

VICEROY 4"x5" RAPID PRINTER

All-metal construction. Takes all negatives to 4"x5". Adjustable masking bands. Dual purpose safelight. Many other modern features.



\$9.75

Send to Dept. B-7 for Full Facts



Money—Do Your Own Prints

Albert De Luxe 5"x7" All-Metal Printer

Takes any negative from 35mm. to 5"x7". Special guides for uncut 35mm. film. Four black metal masking bands, etched with white border guide lines and numerals—three sockets—Hinged metal door for easy access to ground glass for dodging and quick bulb removal. Automatic switch. AC or DC. Safelight, cord and plug included. \$18.50 complete.

\$18.50

ALBERT

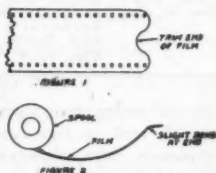
15 grains (1 gram) of anhydrous sodium carbonate in 34 oz. (1 liter) of water. Immerse prints a few at a time and for one minute only in this solution, then transfer them to the print washer. A stronger solution or a longer immersion may affect the whiteness of the paper.

With this method, 10 to 15 minutes of washing is sufficient for single-weight prints, 20 to 30 minutes for double-weight.—Bruce Cole.

35 mm. Developing Tanks

For successful developing of 35 mm. film in tanks, remember to:

1. Use the reel only when thoroughly dry.
 2. Trim end of film as shown (Fig. 1). Do not cut through perforations.
 3. Bend film in direction opposite to natural coil (Fig. 2).
 4. Feed film from loaded spool to reel so that the natural coil of the film is unchanged.
- W. H. Knutz.



Write Articles To Sell Pix

While hunting for a print to go with an article already written one day, I ran onto all sorts of interesting but forgotten pictures. An idea struck me! Why not collect all the best pictures and write articles to fit them? Editors are picture-conscious, always demanding more and better photographs. Hadn't one recently informed me that it was useless to submit a manuscript without several Grade A illustrations?

In my usable collection was a group of waterfall pictures—pictures of large or unusual cataracts. The result was an article, "Waterfalls I Have Seen," which sold readily. Without the pix this piece would have been worthless.

Then I dug up some photographs of a pioneer parade of several years back. They showed pack burros laden with prospecting paraphernalia, covered wagons, painted Indians, etc.



These were also good for a salable article to a church publication for teen-age boys and girls. Pictures used for informative articles like this need not be new, such as spot news pictures, but must be of high quality.

Except for photos of a personal nature,

Great News for Serious Photographers

All Bee Bee Enlargers REDUCED!



THE Brooks organization is moving very soon to better but smaller quarters and simply will not have room to store its present stock of enlargers. To dispose of a large part of this valuable but bulky stock, prices have been reduced as much as 42% on some models. Your dealer will cooperate by showing you these famous enlargers or give you full details as to their construction and specifications as listed on pages 20 to 24 of the Burleigh Brooks catalogue. Here is a brief listing of the four models, showing former and new prices:

Bee Bee MODEL III ENLARGER, for negatives $6\frac{1}{4} \times 9$ cm. or smaller. Magnification about 6 diameters.* Completely equipped with $f/4.5$ anastigmat lens with diaphragm, 6x3 cm. metal mask, bulb and baseboard . . . formerly \$115.00, now only \$80.00

Bee Bee MODEL IV ENLARGER, for negatives 9×12 cm. or smaller. Magnification about 5 diameters. Complete with $3\frac{1}{4}'' f/4.5$ anastigmat lens with diaphragm, 9x12 metal mask, bulb and baseboard . . . formerly \$137.50, now only \$85.00

Bee Bee UNIVERSAL RAJAH "O" ENLARGER (shown above), for negatives 3×4 cm. and smaller, or sections of larger negatives. Magnification about 8 diameters on baseboard.* Complete with a 60 mm. Parastigmat $f/4.5$ special enlarging lens, click-locking diaphragm, single condenser, 75-watt bulb, two metal masks (3×4 cm. and 2×3 cm.) and baseboard . . . formerly \$32.50, now only \$32.50

Bee Bee RAJAFox "O" AUTOFOCUS ENLARGER, for negatives 4×4 cm. and smaller, or sections of larger negatives. Keeps automatically in focus for any picture within its range of 2 to $3\frac{1}{2}$ diameters. A beautifully constructed, easy-to-use instrument. Complete with 60 mm. Parastigmat $f/4.5$ lens with click-locking diaphragm double condenser, 75-watt bulb, cord, three metal masks (3×4 cm., 2×3 cm., and 4×4 cm.), baseboard and switch . . . formerly \$100.00, now only \$67.50

*Unlimited enlargement possible when housing is reversed.

If your dealer cannot supply you with full information, write:

BURLEIGH BROOKS
INCORPORATED
127 WEST 42ND STREET NEW YORK

CONTEST CALENDAR

Open to	Subjects	Prizes	For copy of rules, write to	Contest closes
Anyone	"Key Pictures"	First Prize, \$100; second, \$25; third, \$15; twelve prizes of \$5 each.	See page 31 of this issue.	April 1
Anyone	Any subject illuminated by pocket flashlights, in whole or in part.	\$5 for each photo accepted.	J. M. Mathes, Inc., 122 East 42nd St., New York City.	
Anyone	Two sections: Pictorial and news pictures. (Third Annual Photography Competition.)	In each section: First, \$40; 2nd, \$10.	A. Clarence Smith, Asso. Prof. of Journalism, Kent State University, Kent, Ohio.	Feb. 15 (Entry fee, \$1.00 minimum.)
All amateur photographers	1940 Packard cars, in any setting.	Five new Packard cars, \$3,600 in cash, and 150 awards of merit.	Local Packard dealer, or: Contest Dept., Packard Motor Car Co., Detroit, Mich.	March 15
All amateur photographers	Production, marketing or consumption of eggs and poultry.	First prize, \$25; second, \$15; third, \$10; twenty-five prizes of \$1 each.	American Poultry Journal, 536 So. Clark St., Chicago, Ill.	April 30
Anyone in the United States (except NBC employees and their families)	Pictures describing or symbolizing programs heard over the NBC-Blue Network.	Monthly: \$100, \$50, \$25, and twenty prizes of \$5 each.	"Adventures in Photography," National Broadcasting Co., RCA Building, Radio City, N. Y.	Monthly.

friends, etc., I sold almost everything I had. Go through your pile of pictures, sort out the ones around which articles can be written, sit down to your typewriter and begin to cash in. Keep the pix before you while you write "around" them. They will keep the scene fresh in your mind and suggest numerous angles.

Several pictures showing different phases of one subject or the progress of some undertak-

ing sell easier than a single picture. For example, I took a series of pictures of a giant irrigation dam, showing the work at various stages. An article chronicling the project from beginning to end, accompanied by the pictures, brought a quick check.

Try, at first, to sell the small magazines. The lesser publications do not pay much, but they use a great deal of material.—H. H. Graham.

Use a SOLAR for the finest detail!

The finest detail in your negative may form the most beautiful portion of your print when you enlarge with a Solar. Note the illustration—the minute size of the original as shown above—the wealth of detail as shown below. Solar Enlargers with their perfected light and optical systems, can be depended upon to give you all the detail that exists in your negative.

FREE—A VALUABLE ENLARGING TREATISE

Write today for your copy of "A VALUABLE TREATISE ON ENLARGING". Written by expert, practical workers, it is packed with valuable hints and instructions on projection printing, dodging, double printing, photo-montage, toning, diffusing, and valuable tips on prize prints. Ask for Brochure 84. It's FREE.

BURKE & JAMES, Inc.

223 West Madison Street

CHICAGO, ILLINOIS

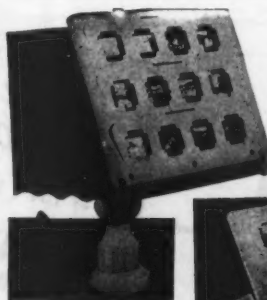
SEE THESE PHOTO EXHIBITS THIS MONTH

City	Street Address	Dates Open	Name of Exhibition
Boston, Mass.	New England Museum of Nat'l History, 234 Berkeley St.	February 1 to 15	1st Annual Boston International Salon of Nature Photography
Brooklyn, N. Y.	Brooklyn Institute, Academy of Music, 30 Lafayette Ave.	February 1 to 28 10 a. m. to 10 p. m.; not open Sundays	One Man Show by Walter E. Owen
Brooklyn, N. Y.	Brooklyn Institute, Dept. of Photography, 30 Lafayette Ave.	February 8	Make-up demonstration for pan-chromatic and color photography
Brooklyn, N. Y.	Brooklyn Institute, Dept. of Photography, 30 Lafayette Ave.	February 29	"A Trip to South America," illustrated with Kodachrome slides
Gary, Ind.	Central Public Library	February 1 to 17; 9 a. m. to 9 p. m.; Sundays, 2 to 6 p. m.	Leonard Missonne Exhibit, 50 prints
Madison, Wis.	Memorial Union, 770 Langdon St.	February 18 to March 3 8 a. m. to 11 p. m.	Seventh National Collegiate Salon of Pictorial Photography
New York City	American Museum of Natural History (Education Hall)	February 17 to 25; 10 a. m. to 5 p. m.	Third Scholastic Salon of Photography
Phoenix, Ariz.	Hotel Adams, Mezzanine	February 1 to 28; 1 to 10 p. m.	Second Valley of the Sun Photographic Salon
Richmond, Va.	Virginia Museum of Fine Arts	February 18 to March 5; 9:30 a. m. to 5 p. m.	Fourth Virginia Photographic Salon
Rochester, N. Y.	Memorial Art Gallery	Jan. 15 to Feb. 25; 10 a. m. to 6 p. m.; Sunday, 2 to 5 p. m.	Fifth Rochester International Salon
San Francisco, Calif.	MH. De Young Memorial Museum, Golden Gate Park	February 15 to March 1	23rd Annual International Salon
Wilmington, Del.	Delaware Art Center	February 5 to 25; 10 a. m. to 5 p. m.; Sundays, 2 to 6 p. m.	Seventh Wilmington International Salon



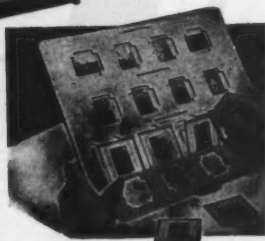
Do your friends yawn while you shuffle through the table drawer to find those color transparencies you shot at the World's Fair last summer? It's easy to organize your collection with FILMDEX and it costs so little! FILMDEX panels take 2 x 2-inch slides of both 35mm. and Bantam size film. Two types—one for cardboard mounts, one for glass mounts. Visible, convenient, compact, FILMDEX protects transparencies against dust, scratches and finger prints. Let's get organized today, the FILMDEX way!

The complete FILMDEX filing-viewing system also includes a unique record-index, vertical file and binder. Ask your dealer, or write for FREE catalog. Mail orders accompanied by remittance shipped same day received.



Each FILMDEX panel is a complete filing-viewing unit for 12 transparencies. Size 8 1/2 x 11", punched for standard ringbook. Price, for cardboard mounts, 23c each postpaid; for glass mounts, 35c each postpaid.

The FILMDEX viewer fits any ordinary household lamp. Used in combination with FILMDEX panels, it evenly illuminates your transparencies in groups of twelve. Price, only \$1.50, postpaid.



FILMDEX

TRADE MARK

Mount Kisco, New York

© 1940, W. N. de Sherbinin. Patented and pat. pend.

Please send free catalog to

Name.....

Address.....

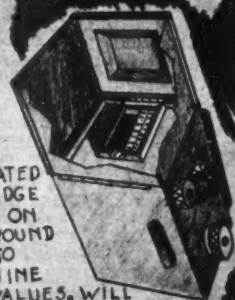
City.....State.....

Fill in, paste to penny postal card, and mail to FILMDEX, Mount Kisco, New York.

FOTO FUTURAMA

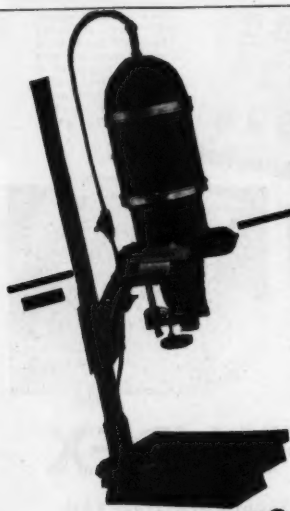
By *W. A. S. A. N.*

A
CALIBRATED
STEP WEDGE
PLACED ON
THE GROUND
GLASS TO
DETERMINE
LIGHT VALUES, WILL
GIVE EXPOSURE DATA
IN REFLEX CAMERAS.



BOTH AMATEUR
AND PROFESSIONAL
FILM EDITORS WILL
WELCOME THE ONE OPERATION
FILM SPICER OF THE FUTURE
WHICH WILL CREATE A PERFECT
BOND THROUGH HEAT AND
PRESSURE.

A SINGLE SETTING
FOR LIGHT CONDITIONS
WILL SIMPLIFY
EXPOSURE THROUGH
COUPLED SHUTTER
AND APERTURE
CONTROLS, OPERATING
SYNCHRONOUSLY.



FOR
**Dark Room
Pleasures**
THESE
WINTER NIGHTS
USE A
SUNRAY ENLARGER

The moment you make your first enlargement with a Sun Ray enlarger
you will be satisfied that there is loads of fun in the dark room—for,
Sun Ray enlargers make dark room pleasures winter nights—and
every night . . .

SUNRAY Mastercraft
2 1/4 x 3 1/4 ENLARGER

Interchangeable lenses, two 4 1/2" removable condensers and opal
glass. Geared trolley accurate focusing unit. Spring grip cast
aluminum arm. Fraction of an inch post adjustment. Adjustable
mask, takes negative from 2 1/4"x3 1/4" down. No. 211 opal enlarging
bulb. Thru draft cooling ventilation. Baseboard size. 18"x24".

**WITHOUT
LENS \$32.50**

With 2 1/4" f6.3 lens
lens, iris
Diaphragm **\$37.50**

With 2 1/4" f4.5 Wol-
lensak lens, iris **\$42.50**
Diaphragm.

Other models from \$16.50 to \$75.00.

Ask your dealer or write
for illustrated literature.

**SUNRAY PHOTO
CO., INC.**
297 Lafayette Street
New York, N. Y.

Eastm
city.
over.T
first flo
yards
and fix
pan to
walked
was an
buildin
cated.
a sham
he fou
He ret
ruins.
it apar
bassy,
Tak
pation.
the fat
on the
went
heroica
and sh
Englan
of thos
On
armisti
trucks,
30-odd
man li
Nazi o
tention
corded
half d
were t
berg.
Stockh
the U
October
How
out of
dought
subject
his pos
age a
splendi
that sh
mentar

Gunning for Pictures

(Continued from page 48)

Eastman Kodak store in the heart of the city. Shells at the time were falling all over. The company's laboratory was on the first floor of a building about a hundred yards from the store. There he developed and fixed his film, then placed it in a large pan to wash. He stepped outside and walked toward the store. Suddenly there was an explosion. A shell had hit the building in which the laboratory was located. He ran back to find the darkroom a shambles, but in the corner of the room he found the pan with the film intact. He returned to his car. It was a mass of ruins. A large shell fragment had ripped it apart. Bryan walked back to the Embassy, marvelling at his narrow escape.

Taking pictures was not his only occupation. With all communications cut off, the fate of those Americans left to carry on the Embassy work was in doubt. Bryan went to the broadcasting station which heroically functioned in spite of bomb and shell and announced by shortwave to England, and then to America, the names of those who were still safe and sound.

On the 21st of September, a "two-hour armistice" was declared, and in Polish trucks, Bryan, with 1,300 citizens of 30-odd countries, were evacuated to German lines. They were received kindly by Nazi officers and troops, while all the attention given the refugees was duly recorded for the Propaganda Bureau by a half dozen official photographers. They were taken by truck and train to Konigsberg. From there Julian Bryan went to Stockholm, where he boarded a boat for the United States, arriving in New York October 7.

How Bryan was able to get his pictures out of Germany is still a mystery. The doughty cameraman refuses to broach the subject. At any rate, they're here, safe in his possession. Thanks are due to his courage and resourcefulness for the first splendid batch of uncensored war pictures that should rank among the finest documentary records of the current world war.

February Finds For Photographic Fans

Rolleicord II, Zeiss Triotar F3.5	\$ 63.00
Rolleicord Ia, Zeiss Triotar F4.5	47.50
Dollina II, Schneider Xenon F2.8	44.50
Dollina II, Schneider Radionar F2.9	37.50
Kodak Reocomar 18, Kodak Anast. F4.5	34.50
Kodak Reocomar 35, Kodak Anast. F4.5	45.00
Super Kodak 620, Kodak Anast. F3.5	167.50
New Contax II, with like new Sonnar F2	182.50
New Contax III, with like new Sonnar F1.5	212.50
Korelle II, Schneider Radionar F2, new	84.50
Korelle II, Zeiss Tessar F2.8, new	109.50
New Leica IIIB, with like new Summar F2	150.00
Leica G, with Summar F2, ev. case	115.00
Robot II, with Carl Zeiss Tessar F2.8	126.00
Robot II, with Carl Zeiss Tessar F3.5	115.00
Kine Exakta, with Zeiss Biotar F2	189.50
Kine Exakta, with Exaktar F3.5, new	97.50
Automatic Rolleiflex, Zeiss Tessar F3.5	110.00
National Graflex, Series II, B&L F3.5	54.50
Bantam Special, Biotar F2, ev. case	54.50
Contaflex, Sonnar F1.5, everyday case	189.50
Contaflex, Sonnar F2, everyday case	149.50
Zeiss Sonnar F3.5 lens, 18cm. Reflex attach. and case	324.50
Zeiss Super Ikonta B, Tessar F2.8	105.00
Contameter for Super Ikonta B	48.00
Speed Graphic 3¼x3¼, Zeiss Tessar F4.5	89.50
Speed Graphic, 3¼x4¼, Zeiss Tessar F4.5, new	95.00
Speed Graphic, 4x5, Zeiss Tessar F4.5, new	94.00
Kodak Model 35, Kodak Anast. F3.5	24.95
Kodak Model 35, Kodak Anast. F4.5	17.95
Robot I, Carl Zeiss Tessar F2.8, ev. case	69.50
Robot I, Carl Zeiss Tessar F3.5, ev. case	59.50
Argus C2, F3.5 coupled rangefinder	18.50
Perflex 44, F2.8 coupled rangefinder	36.00
Contax III, Sonnar F2 lens, ev. case	164.50
Contax II, Sonnar F1.5, ev. case	159.50
Contax II, Sonnar F1.5 ev. case	164.50
Weston Master Exposure meter	18.50
S.S. Photrix exposure meter	14.50
Mini Electric exposure meter	9.95
Kine Exakta, Primoplant, F1.9, new	157.50
Exakta B, Zeiss Tessar F3.5, new	97.50
Exakta B, Zeiss Tessar F2.8, new	112.50
Korelle I, Radionar F2.9, new	63.50
Korelle I, Zeiss Tessar F2.8, new	86.00
Simmon Omega B to 2¼x2¼, no lens, new	45.00
Simmon Omega B to 2¼x2¼, no lens, used	32.50
Super Multiflex, Binar F4.5, to 2¼x3¼	24.50
Leits Valley Enlarger, 35mm. only, no lens	37.50
Leits Focamat I, no lens, 35mm.	54.50
Solar Enlarger to 2¼x3¼, Wollensak F4.5	32.50
Praxidos, 4x4cm., F4.5 lens	22.50
Exakt Enlarger, 2¼x2¼, F4.5	69.50
Vidom Universal Finder	22.50
Bolex H, 16mm., Leits Hektor F1.4	210.00
Bolex H, 8mm., Meyer Kino Plasmal F1.5	195.00
Kodak Precision Enlarger to 2¼x3¼, no lens, new	67.50
Simmon Super Omega B, no lens, to 2¼x2¼, new	69.75
New 8mm. Kodascope 70, 500 watt (less bulb), new	67.50
Kodascope Model G, 750 watt, F1.6	98.50
Cine Kodak Magazine, 16mm., F1.9	44.50
Kine Kodak, Model 60, F1.9	49.50
Kodaslide II, 8" lens, slide projector	26.75
Keystone A-21, 750 watt projector, F1.6	52.50
16mm. Kodascope, Model S, 750 watt, F1.6	98.50
Keystone A-7, 16mm., F2.7, seven speeds	50.00
8mm. Keystone K-8, F1.9 Anast.	40.00
Graflex Cameras, all sizes, all series	Specialty priced

EASY TERMS ARRANGED

Many other bargains not listed above included in this sale.

Write for new Bargain List NOW!
Dept. M-2

All Bargain offering while used are in equal to new condition and sold under our 10-day money-back guarantee.



HABER & FINK INC.
16 WARREN ST. NEW YORK

*The light
with a Punch*



F-R HI-SPOT HOLLYWOOD TYPE SPOTLIGHT

Equipped with Fresnel lens, constructed of die cast aluminum, giving punchy illumination with a soft edge beam, finger tip focusing from a large to a small spot, and many other distinctive features make this F-R Hi-Spot invaluable to the camera user seeking the ultimate in portraiture, modeling and natural color work.

A miniature of the giant and baby Hollywood spotlights, the F-R Hi-Spot though small in size (6½" over all) packs a "terrific wallop." Though modest in price it is comparable to other lights selling many times higher.

FREE

Years for the asking — a copy of "THIRD DIMENSIONAL PORTRAITURE — HOW TO GET IT" by John Hutchins. No obligation whatsoever. Write today to Fink-Roselieve Co., Inc., 109 W. 64th St., N.Y.C. Dept. HS 4.

Complete with special 150 watt Hi-Spot Projection Lamp (Made expressly for this light)

'9"



FINK-ROSELIEVE CO.

Easy Direct Copying

(Continued from page 62)

of a negative. Second, dry development—no liquids touch the prints, consequently, they are true-to-scale.

Third, tracings and drawings can be duplicated on transparent paper or cloth in a few minutes by two simple steps—exposure and dry development.

Fourth, no washing or drying is necessary.

Commercial office equipment is manufactured for the use of this process, but anyone can experiment with Ozalid paper and develop copy prints with ammonia fumes in a tin can.

A conventional printing frame of sufficient size is used to hold the diazo paper and the transparency to be reproduced. Although an arc or photoflood light can be employed for printing, you will find daylight generally sufficient. The time of exposure varies with the light strength and density of the transparency. Several minutes usually are required on cloudy days; one or two in brilliant sunlight. The print can be examined from time to time, to see how the exposure is progressing. Underexposed and undeveloped diazo paper has a yellowish coating. As the light acts on this, it bleaches it white. When there is no trace of yellowishness in the areas that are to reproduce white, exposure is complete.

For developing, the amateur needs little more than a gas-tight container large enough to hold the paper sheet.

A simple arrangement consists of a large can with tight-fitting lid, such as a 5-lb. sodium sulphite or carbonate container, with a small glass tumbler or beaker containing a piece of sponge, on the bottom. The beaker can be anchored so it won't shift around.

Pour a tablespoon of 28% liquid ammonia (solution of ammonia gas in water) over the sponge, and you are ready to develop. For small pieces of paper, it is convenient to have a circular piece of

screen
can be
and be
cumfer
fitting
develop
several
exposed
replace
utes de
is no da
lid on a

Diazo
eraless
for bro
article.
of type
result if
aid of a
keted sp

Drama

talking
Now,
is just v
of the s
that stin
or mood
in a ph
about
about?

When
of the p
duce th
have no
that you
teresting

**16 E
DEVI**
Your 16 e
rain devel
Spitt" 12
only 75c.
No. 828 al
enlargemen
write for
secrets of
MORROW
SUPERLA

screen wire over the beaker. Larger sheets can be handled by removing the screen and bending them around the inside circumference of the can. If the lid is tight-fitting, ammonia fumes strong enough for development will remain in the can for several days. After the paper has been exposed, simply place it in the can and replace the lid quickly. In a few minutes development will be complete. There is no danger of overdeveloping. Keep the lid on as much as possible.

Diazo paper can be employed for cameraless copying in the manner described for bromide paper at the beginning of this article. When it is used for making copies of typewritten matter, cleaner copies will result if the typing has been done with the aid of a special clean-printing ribbon marketed specifically for that purpose.

Dramatize Picture Personality

(Continued from page 27)

talking about one of their pet hobbies.

Now, the important thing to remember is just what brought about this "let-go" of the subject's personality. What was it that stimulated this interesting expression or mood which you in turn want to record in a photograph? What was he talking about . . . or what was he thinking about?

When you actually come to the taking of the picture, it is up to you to re-introduce these ideas or thoughts which you have noticed will bring out the expression that you have decided will make an interesting picture.

16 Exp. CANDID FILMS DEVELOPED and ENLARGED

Your 16 exp. rolls ("split" 120 or 127) fine-grain developed and enlarged to 3x4, only 50c. "Split" 120 film (12 exp.) enlarged to 4x4, only 75c. Panatama, or other cameras, using No. 838 film (8 exp.) 40c for 2 beautiful 3x4 enlargements. Order from now **TODAY** or write for **FREE** print and **FREE** folder giving secrets of shooting better pictures. **IN TODAY-OUT TOMORROW** service on **ALL ORDERS!** **SUPERLABS,** Box 27-M, **ELROY, WIS.**

ONLY 50c

Want a Career in Photography?

Have you ever considered photography as a profitable life-time career . . . or a sideline business in which there are many opportunities to earn an extra income?

If you are ambitious to become a successful photographer, either for pleasure or career, the New York Institute offers you an unusual opportunity to train under the personal direction of some of America's foremost photographic experts. Courses cover Commercial, News, Portrait, Advertising, Color, and Motion Picture photography.

RESIDENT COURSES: Conducted in our modern, completely equipped studios. Day or evening sessions. No classes. You are taught individually. Start any time.

HOME STUDY COURSE: For those who are unable to come to New York. Practical, individual training under the close supervision of the N. Y. I. faculty.

SEND FOR BOOKLET

NEW YORK INSTITUTE OF PHOTOGRAPHY

10 W. 33rd St. (Dept. 117) New York City
ESTABLISHED 1910

Bass says:



I've practically exhausted all the descriptive words in producing my two "books of the month," my famous **BASS PARCAIN-GRAMS**. The editions are unlimited, so please send for yours today. No. 245 for Bill and No. 240 for Movie. Free, of course.

The inhibitions and repressions of 1939 find expression in cameras "graded in" for different models . . . which enables us to advertise

USED CAMERA BARGAINS

- Candid Midget: with F:4.5 Hugo Meyer lens, Vario shutter, new . . . Special, \$9.75
- 9x12 De France: double extension, F:6.3 lens, like new, ipa and 3 holders; was \$32.50 . . . \$16.75
- 3 1/2x4 De France Sport: 8 or 16 on 120 film, F:3.8 Triotar lens, Frontor II shutter, 1 sec. to 150. Like new . . . \$19.75
- Sole Leather Carrying Case . . . \$2.50
- National Graflex, Series I: Tessar F:3.5 lens; like new . . . \$45.00
- Leica A: Elmar F:3.5 lens; carrying case and range-finder; in good condition . . . \$37.50
- Welta Perle: with Steinheil Cassar F:2.9 lens; Comour shutter; like new . . . \$32.50
- 3-A Kodak: Range-finder coupled, Kodamatic shutter, Kodak F:6.3 lens; good condition . . . \$16.50
- Exakta B Jr.: for 127 V. P. film; F:3.5 lens; good condition . . . \$35.00
- Koralia Reflex Model II Victor F:3.5 lens; list \$70; like new . . . \$46.50

Plus a breath-taking collection of new and used **LEICA** and **CONTAX** with every conceivable combination of lens equipment. Supply and demand affect the price . . . so write, specifying your needs. We'll quote you mighty attractive prices.

Dept. MM

BASS CAMERA CO.
175 W. MADISON ST.
CHICAGO, ILL.

HOW

DO EXPOSURE METERS BEHAVE

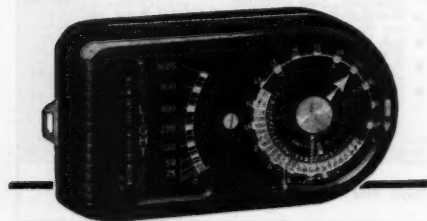


That's a logical question for the photographer to ask . . . since difficulties are encountered with many kinds of equipment in frigid weather. . . . The answer is, however . . . if an exposure meter is properly designed and thoroughly "laboratory tested" such as WESTONS are . . . the meter will give dependable service in zero as well as in temperate weather. In fact a WESTON gives "on-the-dot" camera settings even at 50° below . . . as well as in tropic heat. . . . That's why Admiral Byrd and other arctic explorers consistently use WESTONS. They're standard equipment on all outstanding tropical explorations, too. Which also explains the wide preference for WESTONS by professionals and amateurs alike. They know they will get "year-round" dependability from any exposure meter built by WESTON. Weston Electrical Instrument Corporation, 649 Frelinghuysen Avenue, Newark, New Jersey.

WESTON

Master

INSURES PERFECT PICTURES WITH YOUR CAMERA



New Developer Mixing Methods

(Continued from page 36)

the carbonate is added rapidly to the other ingredients already in the bottle.

Care must be exercised in bringing the carbonate solution and the previously mixed solutions together to prevent spattering the sides of the bottle with drops of the carbonate solution. Should such spattering occur, a drop of the carbonate accelerator will blend with the film or drop of the other mixture at the point where they come together. The result will be a rapid oxidation of the developers and the start of discoloration and staining, which may spread to the rest of the developer mixture. In this case we have started oxidation of the elon and hydroquinone which may progress to spoil the developer.

The success of this procedure for long-keeping developers depends upon avoiding oxidation of the developers by the air until the stock solution we are making is diluted and in use on film or paper. If care has been exercised up to this point and the carbonate solution has been added to the other ingredients in the bottle without spattering, the bottle and its contents are now to be shaken vigorously and the completed developer stock solution should be clear. Cold water may then be added to bring the volume of the stock solution up to the specified volume.

If any darkening is observed or present when the carbonate was added to water, that is an indication that the containers have not been thoroughly washed. The darkening is due to the presence of traces of other chemicals and the darkening may spread to the whole developer mix.

The theory behind this mixing procedure is to get all of the ingredients—developers (elon and hydroquinone), preservative (sulphite), restrainer (bromide), and energizer or accelerator (carbonate)—into one solution without permitting oxidation of the developers to start while they are being mixed. When they have

been
ting
tinu
dation
for o
oxyg
from
(Na₂S
come

It
oxida
mitter
the p
to ke
period
reason
spatte
tion t
dang
velop
not s
this p
air b
sulph
turnin
elon
is red
can th

other
focus
pack
other

Ris
up an
Slit
from
Swi
that
ways.

Swi
conta
vertic

Do
has a
can b
the fo
focus

been successfully mixed without permitting oxidation to start, the sulphite continues to preserve the developers from oxidation. The sulphite has a great affinity for oxygen, so it takes from the air what oxygen is present, thus keeping it away from the developers. [Sodium sulphite (Na_2SO_3) takes oxygen from the air and becomes sodium sulphate (Na_2SO_4).

It has been found by experience that if oxidation of the developers is not permitted to start in the mixing procedure, the protection of the sulphite is sufficient to keep the stock solution clear over a period of several months. For the same reason that we use clean utensils, avoid spattering and add the accelerator solution to our mixture last, we must not endanger its stability by returning used developer to the stock solution bottle. It is not suggested that developer mixed by this procedure be unnecessarily exposed to air because when the concentration of sulphite has been reduced, by part of it turning to sulphate, the protection of the elon and hydroquinone against oxidation is reduced and discoloration and staining can then make headway.

Some Camera A B C's

(Continued from page 55)

other than the movement required for focusing. View-cameras and many film-pack cameras, however, have a variety of other adjustments, including:

Rising front: the lens can be moved up and down.

Sliding front: the lens can be moved from side to side.

Swinging front: the lens is pivoted, so that it can be tilted up, down, or sideways.

Swinging back: the back of the camera, containing the film, can be swung around vertical and horizontal axes.

Double or triple extension: the camera has a very long bellows and a bed which can be racked out to two or three times the focal length of the lens, in order to focus on very near objects.



at ABE COHEN'S EXCHANGE

A Complete Bargain List Available on Request!



35MM CAMERAS

Argus A F4.5 lens	\$6.50
Argus A1 F4.5	9.50
Perlex 44 F2.8	29.50
Argus C F3.5	14.00
35mm Wirgin F4.5	
Compur	15.00
Kodak 35 K.A.	F3.5
	22.50
Robot I Tessar F2.8,	
case	72.50
Robot II Tessar F3.5	
	87.50
Zeiss Tenax I F3.5,	
case	42.50
Dollina III F2.9 Compur	45.00
Anasco Memo (new model) F4.5 lens	17.50
Leica G Summar F2,	
case	129.50
Contax III Sonnar F1.5, case	185.00
Contallex Sonnar F1.5, case	185.00

REFLEX CAMERAS

National Graflex Series I F3.5	\$37.50
National Graflex Series II F3.5	49.50
Night Exakta F1.9, case	97.50
2 1/4 x 2 1/4 Autoflex F2.9 Compur	49.50
2 1/4 x 3 1/4 Zeiss Miroflex C.Z. F4.5	59.50
Exakta A Tessar F2.8	49.50
2 1/4 x 3 1/4 R.B. Graflex B and L F4.5	39.50
3 1/4 x 4 1/4 R.B. Series C Graflex F2.5	89.50
3A Roll Film Graflex, no lens	7.50
3 1/4 x 4 1/4 R.B. Auto Graflex, no lens	45.00

Write for FREE 1940 Catalog



ABE COHEN'S EXCHANGE
142 FULTON STREET · NEW YORK, N. Y.

50¢

SPECIAL

Get acquainted Price

For RAY-DEL DEVELOPER



Just think of it! A full-size package of this fine grain developer... enough to make a full quart for developing 15 rolls of film — at the amazingly low price of 50¢!

RAY-DEL is scientifically balanced and automatically controls the widest range of under and over exposure. It is non-staining... and requires no re-energizing.

AT LEADING DEALERS

Send for your copy of the book: "SUCCESSFUL NEGATIVE PROCESSING." Enclose 5 cents to cover cost of postage and mailing.

RAYGRAM CORP.
429 FOURTH AVE. NEW YORK CITY

BARGAINS *that ARE* BARGAINS *at* FOTOSHOP

Leica Chrome, F2 Lens.....	\$ 98.00
Contax I, F1.8 Lens.....	110.00
3 1/4x4 1/4 Speed Graphic, F1.8 Compur.....	87.00
Rolleiflex, F2.8 Lens.....	25.00
Bellini II, F2.8 Lens.....	25.00
Bell-Howell 70 B, F1.8 Lens.....	125.00
Victor Model 4, F2.8 Lens.....	75.00

Above are a few samples of the hundreds of bargains in used and reconditioned equipment always available from the tremendous trade-in business in our two great stores. Write for our up-to-date specialized lists of real bargains. Specify list number.

- List No. P-1-Leica, Contax Cameras and Lenses.
- List No. P-2-Speed Graphic, Graflex and other Focal Plane Cameras.
- List No. P-3-35mm. and other Miniature Cameras, \$5.00 and up.
- List No. P-4-Rolleiflex, Bellisford, Exakta, Korelle and other Reflex Cameras.
- List No. P-5-Miscellaneous Kodaks, Super Ikonta and other Bull Film Cameras.
- List No. P-6-Motion Picture Cameras, Projectors and Accessories.
- List No. P-7-8x9cm., 9x12cm., 12x15cm. Film Pack Cameras—all types.
- List No. P-8-Enlargers and Darkroom Equipment, Dept. M2



FOTOSHOP, Inc.
18 East 42nd St., N. Y. C.
Branch—136 West 32nd Street

35mm. PERFECTLY \$1
PROCESSED

Fine grain developed (Eastman DK20) and perfectly enlarged to 2 1/4"x3 1/4" glossy prints. New, exclusive methods and equipment used. Cartridge reloaded with Eastman Plus X, 25c. One day service. Satisfaction guaranteed or money back. Write for post-paid mailing bags and information.

TECHNIFINISH LABORATORY
112B Lexington Avenue Rochester, N. Y.

100 Ft. 16 MM.
AMBERTINT FILM \$2.00
Including Machine Processing

Fine grain 16 mm. reversible safety OUTDOOR film, packed daylight spools—ready to load and shoot. Weston ratings 8—a REAL film for better outdoor photography. Shoot more outdoor at less cost with Ambertint. California buyers include sales tax. Order several rolls today.

HOLLYWOODLAND STUDIOS
"The West's Greatest Film Mail Order House"
Southgate Write for Bulk Film Catalog California

**PROTECTED YOUR PRECIOUS
SLIDES with these Wesco
New LOW PRICED Leatherette Covered
SLIDE FILES**

Holds 2"x2" slides with numbered index on cover. In Brown, Blue, Red and Black... **\$1.75**
Double unit with leather handle for 200 slides... \$ 3.95
300 Slide unit with leather handle... \$ 6.95
De Luxe 300 slide unit in genuine Black or Brown Cowhide... \$10.00

See Your Dealer Today!

WESTERN MOVIE SUPPLY CO.
254 SUTTER STREET SAN FRANCISCO

Shooting Stars

(Continued from page 59)

He never works by any set schedule of rules in arranging lights or poses.

How, you may ask, does this photographer of radio big names manage to obtain striking, artistic portraits when he has to have needle-sharp definition, and often uses conventional lighting? The answer is—composition.

Composition is the arranging of the subject in the picture area in a manner that is pleasing to the eye. There are a lot of rules for doing this, but Jackson thinks that it is something that is inherent in the photographer's mind. A sense of composition can, however, be strengthened by proper action, he believes. It is for this reason that he makes a habit of visiting art exhibits, and absorbing artistic ideas wherever else possible.

Men who pose for Jackson's camera seldom employ facial make-up, but three-fourths of the women do. From a photographic standpoint, it makes little difference whether or not make-up is used, although proper preparation of the face will reduce the amount of retouching required. Standard panchromatic make-up, which is on the orange-red side, is employed. There are available the services of two or three make-up experts who can work on the stars. Probably the biggest advantage of using make-up on women, Jackson believes, is its psychological effect. It makes them feel that they are looking their best; and when they feel that way, they pose with greater ease. In cases where make-up fails to make the subject a ravishing beauty, tasteful clothes often help.

The shooting of fashion portraits is an important branch of the N. B. C. photo studio's work. Dress designers and manufacturers provide advance models of dresses, coats, hats, etc., and Jackson photographs these on radio artists. Often much time is consumed in arranging a dress, checking it to see that every seam is in place, dressing the model's hair, and

applying make-up. Such fashion pictures are sent all over the country so they may appear in newspapers and magazines at the same time the clothing is placed on sale. Thus Milady in Keokuk sees her favorite blues singer wearing that new dress that appeared in the downtown store window this afternoon. She rushes down to buy it; and that evening remembers to tune in and hear the singer extol the beauty of love and Blank's hand lotion. Thus are the dress designer, radio star, and the customer in Keokuk made simultaneously happy.

Portraits and fashion pictures are not the only kind of photographs made in connection with the job of informing the world of the activities of radio performers. Ceremonies and other events in which radio stars take part are covered by N. B. C. news photographers.

When television first became of photographic importance, the photographers tried working off the television screen. They found that photographing the image was unsatisfactory, and now they make their pictures by shooting the performers while they are on the stage. The panchromatic make-up used before the television cameras ties in perfectly with the making of performance pictures on panchromatic film.

Outstanding PERFORMANCE Extraordinary VALUE

FEDERAL Photo Enlarger

For all size
Negatives up to
2 1/4 x 3 1/4 INCHES
(Equivalent section larger negatives)

CALIBRATED EASEL, 16x18" BASEBOARD WITH HINGED TYPE BORDER-MAKER AND PAPER HOLDER ATTACHED.

Enlargements 2 1/4 to 7 times on baseboard. Block-type negative carrier. Double diffusing plates supply evenly distributed intensified light. Built in diaphragm with red filter. 125 watt projector lamp included.

MODEL No. 120
Entirely Made in U. S. A.

Complete with **Anastigmat F6.3 LENS**

\$17.95
\$1.00 Higher W. of Miss.

ASK YOUR DEALER

Descriptive Folder on Request

FEDERAL Stamping & Engineering Corp.

24 Lafayette St.
Brooklyn, N. Y.

AMERICA'S FASTEST SELLING ENLARGERS

MINI FLASH
Reg. U. S. Pat. Off. **MADE IN U.S.A.**
with **COLLAPSIBLE REFLECTOR**

\$12.50



THE WORLD'S SMALLEST • SIMPLEST
Flashgun
FITS ALL CAMERAS

- **SENSATIONAL**...Mini-Flash is the newest flashgun—the only flashgun with a collapsible reflector! Fits any camera... easy to attach and operate... with perfect synchronization.
- **LIGHTWEIGHT**...Mini-Flash weighs only 12 ounces—lies easily in the palm of the hand when the 6-inch fan type reflector is collapsed!
- **ECONOMICAL**...Mini-Flash takes any size wire-filled bulb; uses 2 pen-lite batteries good for 6 months; easily replaced; sold anywhere.
- **RELIABLE**... Mini-Flash never throws a "spot"... and is guaranteed for a full year!
- **INEXPENSIVE**. Mini-Flash is \$12.50 complete. Handsome pocket-size leather case... \$2.50

If your dealer is completely sold out, you may order direct from

BERMAN - MEYERS, Inc. 90 West St., New York City • Export Div. 25 Warren St., N. Y. C.

F O T H D E R B Y

Just Reduced!



These are exceptionally fine miniatures for their surprisingly low prices. They are of precise and quality construction throughout, yet amazingly light and compact, measuring only $4\frac{1}{4} \times 2\frac{3}{4} \times 1\frac{1}{4}$ inches.

The Foth-Derby cameras are equipped with the latest type delayed-action focal plane shutters with speeds from $1/25$ to $1/500$ second, and bulb for time exposures, large magnifying tube-right view finders and have many other features, including helical focusing up to $3\frac{1}{2}$ feet. You get 16 pictures, half V.P. size ($1\frac{1}{4} \times 1\frac{1}{8}$) on a roll of standard V.P. film.

with 2" Foth Anastigmat f/3.5.....\$19.50
with 2" Foth Anastigmat f/2.5.....24.50

At Leading Dealers Everywhere

BURLEIGH BROOKS
INCORPORATED

127 WEST 42ND STREET NEW YORK

YOUR ROLL fine grain developed in Champlin's No. 16 and each exposure enlarged to $3\frac{1}{2} \times 5$ on glossy single weight paper. 36 exposure 35mm., \$1.25; 18 exposure 35mm., \$0.65; 16 exposure vest pocket, \$0.65; 828, \$0.30. All work guaranteed, 24 hour service. Credit allowed when one-sixth or more of roll is unprintable.

THE MM SHOP

616 E. Lamme

Bozeman, Montana

Congratulations!

are coming in from hundreds of purchasers of the Fotoshop Almanac Catalog. You will congratulate us and yourself when you get a copy of this remarkable book that contains more photographic information than was ever before packed between two covers.

Send for a copy today . . . 25c if you decide to keep it; if not, return it (postage guaranteed). Free with \$2.00 order.

Dept. M2

18 East 42nd St., N. Y. C.
Branch—136 West 32nd Street

Easy Time Payments can be arranged on Cameras and Equipment.

FOTOSHOP, Inc.

ARGUS OWNERS

Your Argus camera can be easily synchronized to make Speed Flash pictures, with a Kalart Micromatic. Write for FREE Speed Flash Manual. The Kalart Co., Inc., Dept. M-2, 915 Broadway, New York, or Taft Bldg., Hollywood, Calif.

What Is Color?

(Continued from page 35)

yellow is the brightest color, orange and green are in the third position and violet is at the bottom or darkest point. Now look at the chart of values. I have used only seven tints or shades for convenience. The number of tints is only limited, however, by the ability of the eyes to differentiate one from another. Taking the three secondary colors, I have placed them in their proper position in the scale, orange and green in the third squares from the top and the violet in the seventh. To bring orange and green down to the value of violet, black has been added, while to bring violet up to the value of orange and green it has been necessary to add white. White has also been added to the orange and green to make the tones above those two colors. Whenever white is added to a color the resulting color is termed a *tint*; when black is added *shades* of the color are produced.

Intensity, of a color is the measure of its brilliancy or purity. A color is at its fullest intensity when it has not been mixed with a neutralizing agent. The colors in the color wheel are at their fullest intensity. To reduce their intensity add their complementary colors; this results in a graying of the colors until they finally become neutral. The intensity chart, page 2, shows a neutralization of the primary and secondary colors in three steps. In the middle rectangles of color is the gray produced by a mixture of black and white. Color intensity is of importance in composition.

When we have learned to combine colors to produce pleasing harmonies we have taken a long step toward success. Some persons possess a natural ability to group colors which produce a harmonious whole. This ability is spoken of as "color sense." The most pleasing harmonies are seldom produced by groupings of raw colors but rather by combining colors in their proper values and intensities. For convenience color harmonies are classified

as *Monochromatic, Analogous, Complementary, Triads, and Double Complementary*.

The word monochrome means one color. By varying the values of blue, for example, as well as its intensities, it is possible to produce a pleasing harmony. Suppose we desire a still life in a monochromatic harmony. We select an orange vase. By selecting the different values of orange and also the different intensities of orange as shown upon the value and intensity charts, we may produce a very pleasing picture using a single color. The harmony in such a picture would be *monochromatic*. Another harmony is produced by selecting neighboring or related colors. Again examining our color wheel, we find three color families, the orange, the green and the violet. Using the illustration in the preceding paragraph of the orange vase, we may produce an analogous harmony by using yellow or red—the components of orange. We should not, however, use both of the primaries at the same time, since neither red nor yellow are related. A model in a beautiful green gown may be photographed using the proper values of blue or yellow and the result is a harmony by analogy.

In producing a *complementary* harmony the hues or colors that fall directly opposite upon the color wheel are used. Unless proper values and intensities of these colors are used, such a harmony would be apt to offend because of the rawness of the colors.

A *triad* harmony is one using three colors. Not any three colors, but definitely placed colors in the color wheel. If an equilateral triangle of a size to fit within the inner circle of the outer colors of the wheel is laid on the color chart, its three points will rest upon three colors or hues. These may be used in their proper values and intensities to produce a triad harmony. If one point rests upon yellow-orange, the second will point to blue-green and the third to red-violet.

The *double complementary* harmony is a combination of two complementary har-



AMAZING TRICKS YOU CAN DO ... with your camera!

TRICK poses—foreshortening—double exposures, double printing—“ghost” effects—fake backgrounds. There are dozens of tricks you can do. Here’s how you can find out all about them:

New, Easy Way To Take Better Pictures

A new way to learn how to take better pictures has just been perfected by the ACADEMY OF PHOTOGRAPHY. Not only does the ACADEMY bring you novel ideas in trick photography—but it shows you how you can make perfect pictures all the time! Saves you money on wasted film. Cuts down on lost time, effort, materials. Shows you easy ways to do your own darkroom work—turn out prints you’ll be proud to show—photos of exhibition calibre that you may even sell!

7-DAY TRIAL OFFER. The ACADEMY OF PHOTOGRAPHY method is simple, inexpensive, NON-TECHNICAL, quickly mastered. And it costs you nothing UNLESS you are convinced—in the first seven days—it can do all these things for you! Send for FREE BOOK describing this new way to get greater pleasure and profit out of your camera. Mail coupon to: ACADEMY OF PHOTOGRAPHY, Dept. 9B, 118 East 23rd St., New York, N. Y.

ACADEMY OF PHOTOGRAPHY
Dept. 9B, 118 East 23rd St., New York, N. Y.

Send me—free, without obligation—illustrated book describing this New, Easy Way to Take Better Pictures—also details of 7-Day Trial Offer.

Name.....

Address.....

City..... State.....



VICTOR Speed-O-Matic Synchronizer

Fits any camera that takes a wire shutter release. Mechanically synchronizes between-lens shutter with peak of flash at speeds up to and including 1/500 second. Fits all Kodaks from Bantams to 7x12cm. plate back models. Easy to attach, adjust and use. An outstanding value at your dealers. Be sure you buy a VICTOR!

\$875

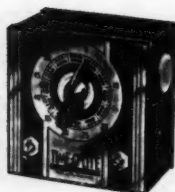
Write James H. Smith & Sons Corp. for folder
243 Colfax Street, Griffith, Indiana

VICTOR Photographic Lights

The handiest piece of equipment in any dark room.

TIME LITE

Ask your Dealer or write for illustrated literature.



MODEL P-39

NO SPRINGS

To rewind or reset. No clock to watch, no monotonous counting.

Just Push the Button

Makes one picture or a thousand from the same negative.

- Dependable . . . accurate . . . guaranteed to a split second.
- Built for a lifetime of service.
- Has self-lubricating synchronous motor.
- Ready to use, plug into any A/C outlet attached to any enlarger.
- Used to control all electric photographic devices . . . enlargers, printers, flood lights, photo engraving, etc.

Model M-39 750 Watts, 110 volts A.C.

\$12.50

Model P-39 Professional . . . makes your contact printer automatic . . . Takes maximum load of 1500 watts.

\$17.50



MODEL M-39

INDUSTRIAL TIMER CORPORATION

103 Edison Place, Newark, N. J.

FIRST STEP to Successful Pictures

Send to "CENTRAL"

GET THIS

Free illustrated catalog listing everything photographic, still and movie cameras, films, lenses, equipment at tremendous savings. Hundreds of bargains new and used—all guaranteed. Liberal trade-ins on cameras and equipment. Write now for free copy of this newest money-saving bargain book—just out! Limited edition. Hurry!



CENTRAL CAMERA CO.

Dept. B-12, 230 So. Wabash Avenue, Chicago, Illinois

35MM FILM

Fine Grain DEVELOPED AND ENLARGED

\$1-

Wrap a dollar bill around any 36-exposure roll of film and send it to us for a particularly good job of fine grain processing, with each good negative enlarged by craftsmen to approximately 3x4. Send an extra 50c (coin) for double-weight mat paper. 35mm. Developed and contact strip prints 18 size, 40c; 36, 60c (see before enlarged).

Genuine Moen-Tone, nationally known, Superior Quality. Established 1899.

MOEN PHOTO SERVICE, 100 Moen Bldg., La Crosse, Wis.

35MM POSITIVE FILM STRIPS

1 strip 36 exposures 35c
3 rolls \$1.00; 6 rolls \$1.75

Sharp, clear, positive prints for projection made from your 35mm film strips; 2 x 2 film slides can readily be made from these positive strips.
DK 20 fine grain developing of negatives—25c per roll, 35 exposures. Refolds of standard film—40c.

Positive Print Co., 129 No. Wood Ave., Linden, N. J.

monies, e. g., red and green, and blue and orange.

Black, gray and white may be used with any single color or color harmony, helping materially in holding the colors together in a harmonious ensemble. If raw colors must be employed, a considerable amount of gray and neutralized colors of the same hue should be used. I have several times referred to the importance of using different values and intensities of the colors. Where large areas of a given color must dominate the picture, the intensity of this dominant color should be reduced. The contrary holds true where small areas of a definite color are used. Important objects may possess a greater color intensity than subordinate objects.

To be truly successful, we must understand something of the psychology of color. The mental effect of colors is well recognized today and extensive studies are being made of the subject. We all know that to some red is an irritating color, while blues and greens are restful. The blues and greens suggest coolness; the reds, oranges and yellows suggest warmth. The blues and violets seem to recede, while the reds and yellows appear to advance (Sections 4 & 5 on Color Chart). Again, we associate colors with various phases of our existence. Blue is associated with coldness and ice; purple with pomp and ceremony; yellow with light and gaiety; green with coolness and comfort; gray suggests solidity and black, mourning.

The effect of the juxtaposition of colors must be thoroughly understood by the color photographer. Unlike colors, when placed next to each other, are modified in apparent hue. They seem to be tinged with the complement of each other. If red is placed next to green, the red will appear redder and the green greener. When used in full intensity the combination will be too raw and shocking. Complementary colors should rarely be used next to each other unless they are grayed or are combined with sufficient neutral color to produce a harmony. When gray is surrounded by a pure color it appears

to be tinged with the complement of the color—e. g., surrounded by red, the gray becomes a greenish-gray. Shadows, which appear to the untrained eye as neutral gray or black, actually take on the complementaries of the adjacent colors. The color photographer will find that colors often “bleed” into each other or otherwise are changed by adjacent colors.

Next month, Mr. Pepper will cover practical applications of color theory in taking pictures with Dufaycolor and Kodachrome color film.—Ed.

Six Rules for Picture Success

(Continued from page 19)

given a one-negative picture.

In developing your films, strive for perfect development. An underdeveloped negative can be compensated with a contrastier paper. But in the process you lose the sparkle of detail and the contrast of values in the blacks and in the whites that distinguish perfection.

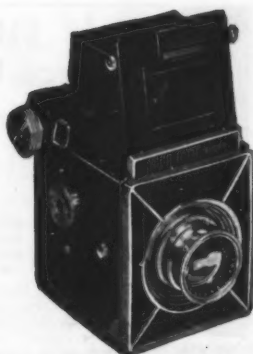
Strive for perfect cleanliness. Dust in the camera that settles on the film will mean a marred negative. Developer that is too cold, or too warm, causes guesswork, and good photography even today is a matter of time and temperatures.

Strive for the perfect print. Do not be happy until you produce a print that rings a loud bell inside of you and convinces you unmistakably that you have achieved perfection.

Strive for perfection in everything you do. The perfectionists get the most enjoyment out of photography, the best pictures and the most pride in their accomplishments.

We have covered six principles that lead to success in photography. This does not mean that there are not others. However, if you will follow these six you will stand a good chance of mastering the others as well. Above everything, do not become discouraged if you do not make masterpieces the first time you use your camera. Be patient. Time will help you prepare a technical foundation that will support a sound photographic structure.

**New
Low
Prices
on**



THE

PILOT Super

HERE is a roll film reflex with several features never before offered in a camera that even approached its amazingly low price range. Just check these six salient points one by one and you will see why the PILOT SUPER is the outstanding value in its field:

1. Removable lens, permitting the use of long focus lenses.
2. Built-in exposure meter.
3. Eye-level view finder.
4. Choice of two picture sizes (making either twelve negatives $2\frac{1}{4} \times 2\frac{1}{4}$ " or sixteen $1\frac{1}{2} \times 2\frac{1}{4}$ " on regular 120 film).
5. Metal focal plane type shutter with speeds up to $1/2000$ second.
6. Film winding and locking device that practically eliminates double exposures. Available with lenses as follows:

$\$4.50 \dots \$32.50 \quad \$3.50 \dots \$42.50 \quad \$2.90 \dots \52.50

If your dealer cannot supply full information, write
BURLEIGH BROOKS, INC.

127 WEST 42nd STREET

NEW YORK

Get THE ENLARGING RESULTS YOU WANT!

★ EQUIP WITH A
WOLLENSAK VELOSTIGMAT

2" $\$4.50$
 $\$15.00$

Sparkle, detail, brilliancy, sharp definition—you want all these qualities to be carried from your miniature negatives to your enlargements. Equip your enlarger with a Wollensak Enlarging Velostigmat. Optically refined to conquer miniature film difficulties. Speeds $f/3.5, f/4.5, f/6.3$; focal lengths, 2" up. Priced from $\$13$. Mail coupon today! *Reg. U. S. Pat. Off.

WOLLENSAK

Wollensak Optical Co.
633 Hudson Ave.
Rochester, N. Y.

Please send me your 24-page descriptive lens catalog, free!

Name.....
Address.....
City..... State.....



IHAGEE DUPLEX

GETS
THEM
ALL!

This unusual value in cameras has gained great popularity with both amateurs and professionals.

Takes plates, film packs or cut films (in sheaths). Has rising and falling front, side swing adjustments, and double extension leather bellows. Brilliant reversible finder with spirit level.

6½x9 cm. Ihagee Duplex— with 4.5 Ihagee Anast. Lens Prontor Shutter*	\$44.00
with 4.5 Ihagee Anast. Lens Compur Shutter*	48.00
with 4.5 Carl Zeiss Tessar Lens Compur Shutter*	60.00

*Self Timing Shutters.

Range finder pictured above is extra.

Ihagee Duplex Cameras are also available in 9x12 cm size.

WRITE FOR DESCRIPTIVE LEAFLET 1M

At your dealers or direct from

MEDO

15 West 47th Street

New York City

**SAFEGUARD — CLASSIFY — INDEX
YOUR VALUABLE FILMS with the**

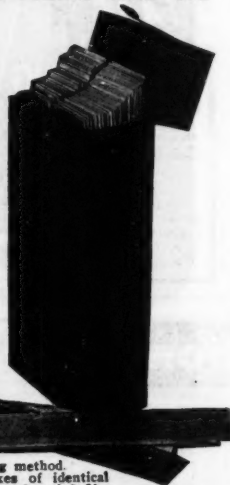
Bee Bee NEGATIVE FILE

... consisting of substantial, handsome cabinet with complete indexes and 100 transparent envelopes — capacity from 200 to 900 negatives—depending on film size.

No. 1—For single and double 35mm. frames\$2.00

No. 2—For Vest Pocket. 4x4 cm. and 3x4 cm. negatives\$2.00

No. 3—For 2¼x3¼, 2¼x2¼ or 1¼x2¼" negatives \$2.00



Bee Bee
FILLETT

The most economical film filing method. Contains envelopes and indexes of identical quality and quantity for Nos. 1, 2 and 3 film sizes. Bored in black leatherette covered cardboard container, cover opens horizontally. Price, for any of above sizes.....

AT LEADING DEALERS EVERYWHERE

\$1.00

BURLEIGH BROOKS

INCORPORATED

127 WEST 42ND STREET

NEW YORK

Using Spots

(Continued from page 63)

spring-balanced and can be set at any height with very little effort. It is also equipped with a special low bracket, permitting it to be lowered within a few inches of the floor.

To produce portraits with modelling it is usually necessary to use some form of auxiliary lighting with fluorescent units. The first attempt to use ordinary spotlights as fillers resulted in burning up the value of the fluorescent light. Care should be exercised in using high-wattage units, no matter how heavily diffused, as they tend to take away the softness which distinguishes portraits made with fluorescent lighting alone.

After experimenting with various lights, it has been found that the Dinky Inkie 100-150-watt incandescent spotlight makes an excellent filler. It is so small that it can be placed near the subject, while the quality and intensity of the light is so easily controlled by the instant focusing device that it is, in effect, a "brush" light suitable for wiping away shadows, and for modelling and brightening skin and hair texture without changing the effect of the fluorescent light which is used as the key or chief light source.

Behind the Newscamera

(Continued from page 74)

be left there. A revenue cutter assigned to meet the cruiser was filled to the gunwales with reporters and photographers. Every syndicate and many of the newspapers had their own tugs.

Looming large in the minds of the picture editors were the dramatic scenes of the Columbus burning, lifeboats pulling away—the meat and sinew of a great picture story. Reporters who spoke German accompanied the cameramen. Thus when the Tuscaloosa first hove into view through a misty rain, the first words sung out from the tugs were: "Bilder! Bilder! Photographie! Kaufen!" Guttural voices were hurled back from the jammed rails of the Tuscaloosa. "Ja! Ja. Wir haben!" The crew had photographs and were willing to sell them! At Ellis Island where the crew debarked, the photographers, reporters, and the syndicate representatives waded into the Columbus' crew

and bought up everything in sight. It made no difference whether the rolls of film might have been under or over exposed or even unexposed. It was all a wild, gambling chance to buy what might turn out to be prize pictures.

Anxious moments were spent in the offices of one large syndicate when the amateur films were rushed to a darkroom-man to develop. His face was white when he emerged with the first developed roll of film—nothing on it! Groans, almost sobs from the editors. A few minutes later the darkroom employee flung out the second dripping roll of film. The editor grabbed it and hurried to the light to scan the results—and more groans. Three exposures, but unsharp, moved, practically worthless.

Groans soon gave way to cheers when the last roll came from the darkroom—nearly every shot a beauty. There were lifeboats on the waves, closeups, long shots, there was the awe-inspiring shot of the giant German liner spouting smoke and flames. Eureka! Many of the other syndicates and newspapers were less fortunate.

The German crew members were not the only ones to sell their snapshots. Aboard the Tuscaloosa, W. P. Burkhardt, fireman, disposed of four rolls of film to one of the large agencies. Most of his pictures were perfect. Burkhardt, an experienced cameraman, using a Korelle-Reflex, made shot after shot as the first wisps of smoke rolled upward from the Columbus following the appearance of the British destroyer on the horizon, the crowded lifeboats dotting the waves, then the Germans being hauled aboard the American warship. Only his last few shots were bad as the last members of the Columbus' crew were brought up in the fading light of late afternoon.

Burkhardt later told one of the syndicate editors that he always keeps himself prepared for such possible eventualities by having his camera loaded with fresh film and close at hand.

SAVE REAL MONEY ON CAMERAS and EQUIPMENT

You Can Buy
ANY CAMERA
ON OUR NATIONAL TIME PAYMENT PLAN
10% DOWN 10% MONTHLY

Here's the NEW BARGAIN PLAN every camera fan has wanted. Here's the NEW BARGAIN CATALOG that saves you real money. LOWEST cash prices. EASIEST time payment plan.

There are HUNDREDS of BARGAINS packed into this great catalog. Brand-new values on every page.

Take advantage of this golden opportunity NOW. Send for this outstanding guide to THRIFTY BUYING! You'll say it's the wisest 10c you ever spent! (Size 8 1/2 x 11", 75 pages, 175 pictures.)



SEND 10c

(Formerly 25c)

**LIBERAL TRADE-IN ALLOWANCE
ON YOUR OLD CAMERA**

For This Great
Catalog of
Camera Values

NATIONAL CAMERA CO.

Y-27 1255 25TH ST., N. W., WASH., D. C.

DIVISION OF NATIONAL TARGET & SUPPLY CO.

35MM

**FILMS DEVELOPED
& ENLARGED \$1**

5x10 Enlargements, 3 for \$1.00

5x7 Enlargements, 4 for \$1.00

Plus 15c for postage.

TO 2 1/2 x 3 1/2 PRINTS
If you want the best at a popular price—give us a try! So perfectly enlarged prints, individually exposed. Returned immediately postpaid for \$1. Write for price list, mailing bags. Clark Laboratories, 5022-S Sales Ave., Fr. Bldg., Wash., D.C.

"PICTURE EDITORS WANTED"

Next month in MINICAM, Alexander King, editorial associate of *Life* magazine, will describe the opportunities opened up by modern pictorial journalism, for men and women who understand pictures. Watch for the article, "Picture Editors Wanted".

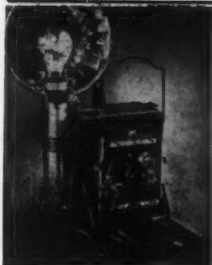
Beware of imitations

**Insist upon
the genuine**

MENDELSON SPEEDGUNS

Illustrated is the Speedgun Model "C" Deluxe for Speed Graphic. With 5-inch Adjustable Applanatic Reflector, \$16.00. With 7-inch A. A. Reflector, \$17.00. Other Speedguns for other Cameras, up to \$25.00. All made in the U.S.A. At your dealer, or write to Dept. M-1.

S. MENDELSON 202 East 44th Street, New York City



Use Your Own Lens on MINI LARGER and Save Money

35mm. to 4x6cm. model fitted for Argus C, C2 or C3 lens, \$18.50; Contax, \$22.50; Foth Derby, \$18.50; Leica, \$20; Perflex, \$18.50; Univex Mercury, \$18.50. For up to 2 1/4" x 2 1/2", with 3" f:4.5 Wollensaak Velostigmat, \$32.50; without lens, \$21. For Koroile or National Graflex lens, \$22.50. For up to 2 1/4" x 3 1/4", with 3 1/2" f:4.5 Wollensaak Velostigmat, \$37.50; without lens, \$25. For 2 1/4" x 3 1/4" Speed Graphic, \$27.50. For up to 3 1/4" x 4 1/4", with 5" f:4.5 Wollensaak Velostigmat, \$52.50; without lens, \$35. All have first quality double condenser illumination; high-low light control; foot switch and very rigid construction. WOLLENSAK VELOSTIGMATS in barrel with iris diaphragm; 2" focus f:3.5, \$14.50; 3" f:4.5, \$14; 3 1/2" f:4.5, \$15; 5" f:4.5, \$22. All prices postpaid; subject to return within 10 days if not satisfactory. Circular Free.

LEONARD WESTPHALAN
506 N. State Street
Dept. C-2, Chicago, Ill.



\$29.50

Sell the Small Fry

(Continued from page 50)

pictures, but unless they add up to a news feature they will gain you nothing more valuable than a reputation as a nuisance. If your dog, by his persistent barking, saves a roomful of kids from burning to death in a school fire, then certainly it is time to haul out your camera and start shooting.

Newspaper features can be made. Staff photographers, in their routine search for human interest shots, have made a science of this, and a fairly large proportion of the halftones in your newspaper originated in such a manner. An example of this was the shot appearing in many papers of a group of college girls peeling off their silk stockings. The cutlines explained that they had decided to boycott Japanese silk and wear cotton because of the Chinese-Japanese war. It's dollars to doughnuts the photographer cooked up the story and suggested it to the girls, who, like most girls, were not averse to a little publicity.

Too many amateur prints show the subject standing woodenly with an embarrassed smirk on his face. This is not so good for your batting average. If your model is the champion corn husker of Giles County, portray him husking corn, and if he is a swimming wizard, show him in the water. Avoid as a plague the appearance of posing. I have violated this cardinal rule a great many times, and it hasn't brightened my morning mail a bit. Novel distortion and angle shots are acceptable if they are good. Try to add something striking or unusual to your composition. You won't always be able to do so, but it will help your sales to try.

Newspapers, as you probably know, deal in superlatives. "The largest," "the smallest" and "the only" are phrases which will serve you faithfully. On a farm near my home recently a cow shocked everybody for miles around by giving birth to five calves in one wholesale blessed event. I questioned veterinarians and was told that it was the first time they had heard of such a thing. The pictures sold readily.

DEVELOPED AND ENLARGED

35 MM FILM

End your developing problem! Any 36 exposure roll of film, fine grain processed and each good negative enlarged to approximately 3"x4" on single weight glossy paper for only \$1.00. Send your order in today. Simply wrap a \$1 bill around your roll of film (or sent C. O. D. plus postage) and mail today. It will pay you!



MINILABS

Dept. 38

Box 485 MADISON SQUARE P.O. NEW YORK, N.Y.

COMING TO NEW YORK?

S

TOP AT

"A GREAT HOTEL"

SINGLE from \$3. DOUBLE \$4.50

1 BLOCK FROM PENN. STATION
B. & O. Motor Coaches stop at our door.

**HOTEL
McALPIN**

BROADWAY AT 34th ST., NEW YORK
Under KNOTT Mgt. John J. Woeiffo, Mgr.

They were right down newspaper alley, because it was the first bovine quintuplet birth on record.

I use an Argus and a Graflex with an f4.5 lens, but any camera capable of turning out sharply defined 8x10 prints will serve. Many newspapers will accept smaller prints if the story is worthwhile, although it is not wise to submit anything under 5x7.

Newspapers want brilliant, glossy prints with plenty of contrast. I use Eastman Super Sensitive Panchromatic and Panatomic film and develop it 15 minutes in D-76. Most of my prints are made on News Bromide, developed in a one-to-four solution of D-72.

A final word about the preparation of copy to accompany your photographs. It is imperative that your copy be cleanly typewritten, and never, never write on both sides of the paper. It is good practice to pencil your name and address lightly on the back of each print and to attach your captions. Identify clearly all persons and things shown in the picture. Newspapers often receive pictures and copy gratis. For this reason, it is well to type "submitted at regular rates" at the top of the first page of your manuscript and also to pencil this on the back of the prints. Then if your pictures are published you can be certain that you will be paid for them.

For the results of a survey of newspaper markets for the amateur photographer see the March issue of MINICAM magazine.

Machine Gun Camera

(Continued from page 75)

apertures which took the place of the bullet chambers in an ordinary gun. The photographer placed a sensitized plate behind these apertures, and performing an operation analogous to cocking, he set his camera. When he saw a bird flying, he took aim, pulled the trigger, and the chamber revolved once. In one second he made twelve pictures of the bird in various positions.



Bee Bee ILLUMINATED VIEWER

for
Mounted Color
Slides and
35 mm. Film

Made in U. S. A.

THIS recent addition to the Brooks line gives an amazingly realistic "third dimension" or stereo-effect. It brings out all the rich natural colors in transparencies and its precisely ground lens makes 35mm. frames appear to be enlarged to approximately $2\frac{1}{2} \times 3\frac{1}{2}$ inches. The entire frame is cast aluminum, in one piece. There is nothing fragile or delicate about it, though it weighs only about 2 pounds. A 6-foot cord with a handy snap switch is provided.

Complete, ready for use, only..... \$10.00

Carrier for 35mm. film..... \$ 1.75

AT LEADING DEALERS EVERYWHERE

BURLEIGH BROOKS

INCORPORATED

127 WEST 42ND STREET

NEW YORK

1940 BRINGS PENN'S GREATEST CATALOGUE

full of bargains, information, and color. Please ask for catalogue No. 22.

PENN

CAMERA EXCHANGE, INC.
120 West 32nd St. N. Y. C.



Index to MINICAM

An index covering MINICAM Magazine, Volume 2, September, 1938, through August, 1939, is available at ten cents the copy; or free with a \$2.50 one year subscription or renewal.

MINICAM MAGAZINE

22 East 12th Street

Cincinnati, Ohio

35^{MM} FILM

DEVELOPED ULTRA fine grain.

and

ENLARGED Each good frame to $3\frac{1}{2} \times 5\frac{1}{2}$ on Kodabrom.

FREE 8x10 Enlargement with \$3.00 order.

WALTER LABORATORIES
20 Fountain Ave., Brooklyn, N. Y.



Learn Photography at HOME

Splendid opportunities. Prepare quickly in spare time. Easy method. No previous experience necessary, common school education sufficient. Many earn while learning. Send for free booklet "Opportunities in Modern Photography", particulars and requirements.

3801 Michigan Avenue

Sept. 1938

Chicago, Illinois

MAKE MONEY FROM Your PHOTOGRAPHS

AND START YOURSELF IN BUSINESS

selling "GLOSS-TONE" Advertising Post Cards of your pictures in quantities to business men, tourist camps, hotels, etc. You get paid for the picture, make a commission on the Post Cards—no investment required. Write for complete sales material and samples of these realistic photographic reproductions. Big commissions—low cost—easy sales.

FORT WAYNE PRINTING CO.

Dept. M-240 — Ft. Wayne, Ind.

CAMERAS ON UNEEDA'S EASY TIME PAYMENT PLAN!

Just out! Uneeda's big new 1940 profusely illustrated catalog listing nationally advertised cameras and accessories. You can get any article listed on our famous Easy Payment Plan. Low cash prices. No interest to pay. No extras. No charge for credit! You are fully protected by our money-back guarantee. Send postcard TODAY. NOW. Your copy sent by RETURN MAIL.

UNEEDA CAMERA CO.

Dept. M-3

275 Livingston St., Brooklyn, N. Y.

35MM. FILM

New Dupont No. 3 Weston Ratings 125 Day, 64 Tung. 25 foot roll 36 exposure roll 55c; 4 for \$1. - \$1.40

Dupont Superior Agfa Ultra and

Ektaman Plus X, 25 foot roll - \$1

Prompt deliveries, Post Paid, Free Catalogs.

Repacked and Guaranteed by

OPTICAL DEVELOPMENT CORP.

KATONAH, N. Y.

FOR PERFECT FLASHES

**JACOBSON
SYNCHRONIZER**

AT ALL BETTER STORES

IRVING MANUFACTURING CO.

1537 No. Hoover St. • Hollywood, Calif.



35mm FILM
ultra FINE GRAIN DEVELOPED
AND VAPORATE TREATED
for your future protection

25¢

DEVELOPING - VAPORATE &
PRINTS IN CONTINUOUS STRIP

18 Exp. Roll 40c - 36 Exp. Roll 50c

DEVELOPING - VAPORATE AND

3/4" x 4 1/4" GLOSSY ENLARGEMENTS

18 Exp. Roll 75c - 36 Exp. Roll 1.00

Single Frame - Memo - Unives film enlarged to 2 1/2" x 3 1/2"

Please Remit With Order To Save C.O.D. Charges

DEVELOPIX

Flannan Bldg. New York N.Y.

Photography TRADE NEWS

Price Reduction on Agfa Film

Prices on Agfa Triple S Pan and Superpan Press cut films are now reduced to those of Agfa Superpan Portrait, SS Pan and other Agfa Panchromatic films. With this price reduction, it now becomes possible for photographers to obtain these two high-speed films at regular Panchromatic film prices.

Anniversary Speed Graphics

The Folmer Graflex Corporation has announced improved models of the 3 1/4 x 4 1/4 and 4 x 5 Speed Graphics to be known as the Anniversary Speed Graphics.

New features of these cameras include: a lateral shift of the front standard, in addition to the existing vertical shift; a drop-bed locking rigidly and well out of the field of wide-angle lenses; a two-piece linked track for rack-and-pinion focusing of the wide-angle lenses; dual focusing controls for right-hand and left-hand operation; a track-lock to fix the lens in position after a critical focus has been obtained; a one-piece all-metal front standard; a new type of lock that fixes the front-standard very rigidly; and a wire frame viewfinder that telescopes into the front standard when not in use, in addition to the existing parallax-correcting tubular viewfinder that has been accorded such enthusiastic approval by its users. The bed of the new models is all-metal, and it has been made possible to provide for a simplified protected internal coupling of accessory rangefinders.

Fink-Roselieve "Hi-Spot"

Fink-Roselieve announce their new F-R "Hi-Spot" (\$9.95) spotlight. Featured in this spotlight are finger tip focusing from a large to a small spot, heat dissipating fins, sturdy die cast construction, perfect centering of the filament in relation to the reflector, ample ventilation on all sides, standard tripod thread and a special 150 watt projection lamp made expressly for this light.

Fink-Roselieve announces in conjunction with this lamp a new booklet on photographic lighting by John Hutchins. The title is "Third Dimensional Portraiture—How To Get It." The booklet is available on request. Inquiries should be addressed to Fink-Roselieve Co., 109 West 64th Street, New York.

New Prices

Burlingh Brooks, 127 W. 42nd St., N. Y. C., has announced price reductions on the following items:

The Automatic Rolleiiflex is \$144.00, without case.

(\$10.00 for case).

The New Standard Rolleiiflex is \$130.00, without case.

(\$10.00 for case).

The 4 1/4 cm. Rolleiiflex is \$127.00, without case. (\$8.00 for case).

The Model 11 Rolleiicord is \$90.00, without case.

(\$8.50 for case).

The Model 10 Rolleiicord is \$67.50, without case.

(\$8.50 for case).

The popular Dollina "O" with Certar 4.5 lens is reduced from \$23.00 to \$18.50. The model equipped with an f2.9 lens is reduced from \$34.00 to \$28.50.

The Super Sport Dolly with built-in range finder and exposure meter now ranges in price from \$60.00 to \$75.00, depending on lens equipment.

The regular S. S. Dolly with a Meyer Trioplan f2.9 lens has been reduced from \$45.00 to \$40.00. Same, with Schneider Xenar f2.9 lens is now \$47.50 instead of \$63.00. Equipped with a Zeiss Tessar f2.8 lens, the S. S. Dolly is now \$55.00 instead of \$75.00 as previously listed.

The Foth Derby now lists at \$19.50 for the 3.5 model and \$24.50 for the 2.5 model.

All Bee Bee Cameras are reduced about 20% and the Pilot Super approximately 15%.

All Schneider Lenses will go back to the prices effective in our price list of April 22nd, with the exception of Angulon and Componar types which have been advanced 15% since then.

UniveX Mercury Contest Rules



More than 200 enlargements were entered in the Mercury Photographic Salon sponsored by the Universal Camera Corporation.

First prize, a UniveX Micrographic Enlarger, was awarded to James Milne of Pittsfield, Massachusetts, for the print reproduced above. Two gross of Gevaert Enlarging Paper was awarded the second prize winner, Bob Thompson, Grand Rapids, Mich., and a third prize of a UniveX Table Tripod went to Miss Irene Fischer of Philadelphia.

Bass Bargainingram

The BASS Still Camera Bargainingram No. 242, 72-page exposition of cameras, enlargers, apparatus and supplies, with all new text books is now ready. A copy of this catalog will be mailed free to readers of MINICAM.

Bargain Catalogue

The Central Camera Company of Chicago announces a "Special Clearance" Bargain Book. Among the items offered are new and used cameras from miniatures to large studio jobs, a wide range of enlargers and enlarging equipment, and hundreds of accessories and supplies, all marked down for clearance.

Copies of this free booklet may be obtained by writing Central Camera Company, 230 South Wabash Ave., Chicago, Illinois.

For Lessons in Photography

J. Ghislain Lootens, F. R. P. S., contributing editor on MINICAM, announces the opening of his new studio at 277 Lexington Ave., New York City, with facilities for group instruction or private lessons in photography.

\$5 Per Picture

Because pocket flashlights of the new pre-focused type can be used as miniature spotlights in the taking of table-top photographs, the makers of "Eveready" flashlights and batteries announced that they will consider for purchase photographs in which illumination has been supplied in whole or in part by pocket flashlights. Five dollars will be paid for each photograph accepted. (This is not an offer to purchase, but merely an announcement that submissions from prospective sellers will be considered.) Photographs should be sent to the company's advertising agency, J. M. Mathes, Inc., 122 East 42nd Street, New York, N. Y.

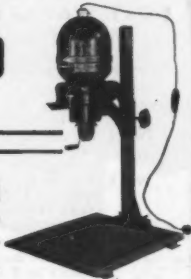
PRICE SLASH!

LUMIMAX ENLARGER

Regular Price, \$48.00

NOW \$27.50

Complete



Only 50 to sell at this sensation-ally low price—order yours now! You get a complete enlarger—nothing else to buy. 75mm. F:4.5 anastigmat lens. Single condenser optical system. 60-watt G. E. bulb. Red filter. Takes negatives up to 2 1/4" x 2 1/4".

See your dealer, or write

HENRY HERBERT

483-485 Fifth Avenue, New York, N. Y.



35MM FILM DEVELOPED & ENLARGED

36 EXP. ENLARGED TO 3x4

Your 36 exposure 35mm. roll ultra fine-grain developed and one brilliant 3x4 print of each frame, only \$2.00! Beautiful, fade-proof quality. RUSH service—IN TODAY—OUT TOMORROW. Send rolls NOW or write for FREE Mailers, free print and folder giving secrets of shooting better pictures. SUPERLABS, Box 620, ELROY, WIS.



Used Cameras At Unusual Prices!

Every camera listed, guaranteed perfect—10-day trial.

Kodak K-35, F:5.6 lens	\$ 10.00
Foth Derby, F:2.5	15.50
Virgil Reflex, F:2.5 in Compur	22.50
Certe Dollina II, F:2.9 Radionar and Rapid Compur	32.50
Welter, F:2.9 Coupled Finder and Rapid Compur	55.00
Super Ikonat A, F:3.5 Tessar, late model	72.50
Rolleicord, F:3.5 lens (eveready case)	72.50
Leica Model G, F:2 Summar (eveready case)	122.50
Contax II, F:2 Sonnar (eveready case)	145.00
Contax III, F:1.5 Sonnar (eveready case)	187.50

CAMERA DEPT., New York Loan Office

116 N. Liberty Street

Baltimore, Md.



PAPER SAMPLERS

To Acquaint the Photographer with Some of Gevaert's Most Popular Brands and Surfaces

The papers included in the Samplers below provide the photographer with a good variety of brands and surfaces for different print needs. We offer these items for a limited time to familiarize the photographer with these superior papers. Send check or P.O. Money Order. No C.O.D. or stamps!

- No. 1. Pictorial Projection Sampler . . . \$1.00
(20 sheets 8x10, 5 surfaces, Artona Rapid, Artex, Novabrom)
- No. 2. Professional Enlarging Sampler . \$1.00
(20 sheets 8x10, 5 surfaces, Novabrom, Artex, Novatone)
- No. 3. Paper Negatives Book and Sampler Package . . . \$1.00
(1 copy "Paper Negative" by C. W. Gibbs, A.R.P.S.; 12 sheets 8x10, 2 surfaces, Novabrom, Artex)
- No. 4. Contact Sampler . . . \$0.50
(36 sheets 5x7, 6 surfaces, Artona, Novagas)
- No. 5. "Simplified H&D" by C. W. Gibbs, A.R.P.S. . . . \$0.50
(An excellent treatise written in simple non-technical language. Should be on every photographer's book shelf.)

The new Gevaert Book of Formulas is sent free with each Sampler package

◀ THE GEVAERT COMPANY OF AMERICA, INC. ▶

423 WEST 55TH STREET, NEW YORK
 Boston: 44 School St. Chicago: 200 E. Illinois St. Philadelphia: 1015 Chestnut St. Los Angeles: 6372 Santa Monica Blvd. San Francisco: 45 Second St.
 In Canada: GEVAERT (CANADA) LIMITED
 Toronto: 345 Adelaide St. W. Montreal: 417 St. Peter St. Winnipeg: 365 Hargrave St.

Soldering Stainless Steel

Stainless steel equipment can be soldered. For information and the necessary supplies write L. B. Allen Co., Inc., 6719 Bryn Mawr Ave., Chicago, Ill.

New Exposure Guide

The Wabash Photolamp Corporation has just issued a new exposure guide, listing all popular roll films, film packs, miniature films and cut films, with complete exposure tables on their use with any camera. A special page is devoted to flash with focal plane cameras of either the miniature type or the large 4x5" Speed Graphic or Graflex. All popular home movie films and exposure tables for each are also listed. Write for complimentary copy to Wabash Photolamp Corporation, Brooklyn, New York.

Superflash Sunlite Bulb

Wabash Photolamp Corporation, Brooklyn, New York, announces a new flash bulb which incorporates its own blue color-correction filter to change the color temperature of the light source to the equivalent of outdoor sunlight. It can be used with any regular daylight film, indoors or outdoors, without a filter. The new Superflash Sunlite No. 2 (\$2.25) is made in the same A19 bulb size as the regular Superflash No. 2, and is easily identified by its daylight blue color. Its long-peak-light flash characteristics make it suitable for use with either focal plane or compur-type shutters. Complete technical data and exposure tables for use with all color films can be had by writing Wabash Photolamp Corporation, Brooklyn, New York.

New Mini-Flash

The new Mini-Flash (\$12.50) manufactured by Berman-Meyers, Inc., 90 West Street, New York City, features a collapsible reflector which when fully collapsed makes the entire unit 5 1/4" high. The weight is 12 ounces.

An accessory side-lighting feature (\$6.75) consisting of a collapsible reflector, bracket, clamp, and ten feet of cord is also announced. Additional reflectors are sold separately for \$3.75. A leather carrying case (\$2.50) is also available.

Photoflash for Color Photography

A new photoflash lamp coated with a corrected blue filter lacquer enables photographers to take flash pictures in color indoors or out, day or night. Called G-E Mazda Photoflash Lamp No. 21 B (\$2.25) it is similar in construction and shape to No. 21. The new blue lamp is suitable for use with daylight Kodachrome film.

Because it makes available a wealth of photographic "balanced light," the new No. 21B (B for blue) is ideal for use in combination with natural daylight. It is designed for use in taking color pictures by either the synchronized or open-flash method. Its light is scientifically matched to outdoor color films.

Essential technical data pertaining to the new No. 21B lamp are: Voltage range for operation, 3 to 125; bulb diameter, 2 3/8"; maximum all-over length, 5"; base, medium screw.



ELECTRIC EYE

Argus, Leica, Univex-Mercury 35 MM
 Fine Grain Developed and 3 1/4 x 4 1/4 Enlarged Prints by Photo-Cell method.
 Money Back Guarantee—Drop us a card for the facts and FREE Mailing Bag.
PHOTO-ELECTRO LAB.
 P. O. Box 861, Bridgeport, Conn.

35MM. RELOADED CARTRIDGES

(36 Exposures)

AGFA	EASTMAN	DUPONT
Supreme	Background X	Par Fax
Ultra Speed	Super X	Superior
Infra Red	Plus X	Superior II
Positive	Super XX	Positive

YOUR CHOICE 3 for \$1.00
 Write for Free Weston Rating List
NATIONAL FILM COMPANY
 8750 Olympic Los Angeles, Calif.

Every issue of MINICAM is valuable FILE THEM

In this handsome binder

and you will have a beautifully bound reference book of photo-lore obtainable from no other source.

After careful research the publishers of MINICAM decided this was the best binder built. Handsome leather-like cover. Gold Stamped Titles. Compact, simple, secure binding device. By special arrangement this unusual binder is offered at the low price of

\$1.50 Post Paid

Cash with the order. Money refunded if not MORE than satisfied.

THE GILMER BINDER, 228 Chancellor St., Philadelphia, Pa.

Kalart Speed Flash Manual

The newest edition of the Kalart Speed Flash Manual contains complete information on Speed Flash photography including complete exposure charts for all types of flashbulbs as well as exposure recommendations for all films. Details on the use of the Micromatic Speed Flash with more than thirty of the most popular cameras is also given.

A free copy of this manual may be secured by writing direct to the Kalart Company, 915 Broadway, New York, N. Y.

Kalart Fits New Kodaks

Eastman Kodak's two new cameras, the Vigilant and the Monitor can be fitted with the regular Low Tension model of the Kalart Micromatic Speed Flash. These cameras have the Supermatic shutter.

Vigilant and Monitor cameras may also be purchased with the Kodamatic Shutter. The Low Tension model of the Kalart Micromatic Speed Flash also fits this shutter.

Box Cameras with Detachable Flash Units



Illustrated is the A8 Cadet-Flash, one of two new Agfa cameras with built in synchronization and separate flash unit. The synchronizing mechanism does not interfere with the use of the camera for outdoor picture-taking, but at night or indoors the separate flash unit can be quickly attached. The flash unit uses two penlight-size batteries. This camera takes eight $1\frac{1}{2} \times 2\frac{1}{2}$ inch pictures per roll of A8 (127) film.

The B2 Shur-Flash camera (\$3.95), also with synchronizing mechanism, takes eight $2\frac{1}{4} \times 3\frac{1}{4}$ inch pictures per roll of B2 (120) film. It has a meniscus lens, two diaphragm openings, and an optical. Price includes flash unit but not

direct-view finder, lamps or batteries.

Synchronizer and Multiple Lighting Plug

Special models of the Goodspeed flash synchronizer (\$15) for the Contax, Leica, and Zeiss Super Ikonta B cameras have been announced by Goodspeed, Inc., 220 Fifth Ave., New York City. The problem of compactness has been solved by using six "penlite" cells housed in the reflector casing instead of the usual bulky battery box.

A special multiple outlet built into the flash unit which requires nothing more than an extension cord for use has also been announced. This makes "at-the-camera" technique interchangeable with the multiple lighting procedure.

For further information write to Goodspeed, Inc., or see your dealer.

Westinghouse 21-B

The Westinghouse Lamp Division, Westinghouse Electric & Manufacturing Company, Bloomfield, New Jersey, has announced a new blue-coated photoflash lamp (\$2.5) which enables users to obtain true color values on daylight color film exposed indoors or out, day or night. The lacquer coating serves as a color correcting filter, enabling the bulb to produce what engineers term a photographically balanced light of a color temperature of approximately 6500 degrees Kelvin, which meets the specific requirements of daylight color film.

Similar to the standard Marda Synchro Press Photoflash Lamp No. 21 in size, shape, construction, and amount of filling, the 21-B may be used for taking color photos by the open flash method or with synchronized photoflash equipment.

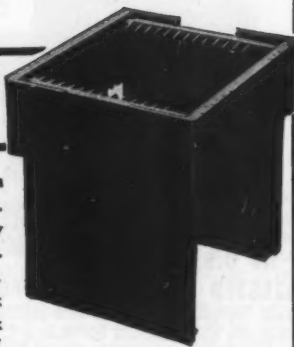
Fotocraft Double Print Roller

The Raygram Corporation, 425 Fourth Ave., New York City, is distributing the Fotocraft Double Print Roller (\$7.75). This roller eliminates air bubbles and insures positive contact with the squeegee plate. It is constructed of black, sulphur free rubber, mounted on waterproof, non-shrinking wood dowels.

ELKAY ADJUSTABLE FILM HOLDER

RAPID
LOADING

\$3.50
Complete



For cut film and film pack. Fits practically all 4×5 tanks. Takes 6×9 cm. $2\frac{1}{4} \times 3\frac{1}{4}$, 9×12 cm., $3\frac{1}{4} \times 4\frac{1}{4}$ and 4×5 sizes. Foolproof loading fixture included at no extra cost. Tempered bakelite. Loads a dozen.

Made in U. S. A.

At your dealer or write for details.

ELKAY PHOTO PRODUCTS, Inc. 303 Washington St. Newark, N. J.

FOR BRIGHTER, EASIER PROJECTION



Of Film Strips and 2×2 Slides. Choose the SVE Tri-Purpose Projector. Illustrated is the new 150 watt Model DD which permits changing slides from the top and has many other advanced features. Write for circular "Show It Tonight". Society for Visual Education, Inc., Dept. 2M, 100 E. Ohio Street, Chicago, Ill.

WHY NOT "superfine" YOUR FILMS?

35mm. films developed in a Super-fine process—Eastman's new DK20—and each good frame enlarged to $3\frac{1}{2} \times 4$. Send for free mailing bag and other attractive offers—or send \$1.00 with roll of film.

SUPERFINE LABORATORIES

954 58th Street, Brooklyn, N. Y.

Clean Fresh	35 MM. BULK FILM	Tested Guaranteed
PLUS X	\$1	AGFA SUPRAME \$1.25
SUPER	25	SUPER XX 25
Superior No. 1	FL	PANATOMIC X 25
		INFRARED
		SUPERIOR No. 2
	25 ft. MINIMUM order, postpaid in U. S. A.	
	Cartridges of above—\$3 for \$1.	Cartridges of above, \$60
	SAVE MONEY FILM	
Dept. A.	7424 Sunset Blvd.,	Hollywood, Calif.

CAMERA BARGAINS!

Write TODAY for FREE Bargain Bulletin No. 801!
 • Liberal Trade-ins • 10-Day Trial • Easy Terms Too
 • No Interest or carrying charges. • No down payment.
 • First payment after 30 days. • Up to a year to pay.
 NEW 1944 CATALOG—Send 10¢—Refunded on First \$1 order.

GEORGE LEVINE & SONS

15 CORNHILL BOSTON MASS
 A Quarter Century on Cornhill

DUREX EXPOSURE METER



**ONE METER
FOR BOTH
CINE and
STILL**

**MADE
IN U.S.A.**

**Complete
In Case \$2.25**

TESTED AND APPROVED FOR ACCURACY

The Durex Meter has the Accuracy, Compactness, Ease of Operation and Convenience of the more expensive meters at a price you can afford to pay—Calibrated in Weston ratings—Eliminates exposure errors and pays for itself in saved negatives—Sturdy vest-pocket size construction. At your Dealer or direct, postpaid. For literature write Dept. M.

DUREX MFG. CORP., 17 W. 3rd ST., NEW YORK CITY
Foreign Division: 145 W. 45th St., N. Y. C.

ROLYN DARK-ROOM LAMP

with the sensational new

ROLYN SAFELITES



Just out. Available in red, orange and yellow. Interchangeable in 5 sec. Made entirely of quality plastic. Practically indestructible. 4 1/2" diameter. Gives you a beautiful, safe, translucent light directed where you want it. A most unusual value. At your dealer or order direct. **\$1.75** State color. Postpaid, only...

Robert M. Lynn
952 So. Grand Ave., Dept. M-2
LOS ANGELES, CALIFORNIA

MADE IN
U. S. A.



CAMERAS-ACCESSORIES
NEW & USED at BARGAIN PRICES

TRADE-IN
YOUR OLD
CAMERA

UP TO 50% OFF!

Write us now—take advantage of the sensational savings we are offering.

CAMERA EXCHANGE ORIGINATORS SINCE 1890
118 FULTON ST. NEW YORK CAMERA EXCHANGE NEW YORK CITY
Trades Accepted—Write Dept. M-2

CANDID CAMERA FANS ALL THIS FOR \$1.75

ANY 36 EXPOSURE ROLL—1. Fine grain developed; 2. One 3x4 glossy finish print of each 36 exposures; 3. Your negative vaporized (preserves negative forever); 4. Reload your magazine with Super Sensitive Panchromatic film. 36 exposures; 5. Valuable coupon with each order. Total Value \$3.35. Yours for \$1.75. California buyers include sales tax. Write for free mailing bags.

18 Exposures, same as above, \$1.25

HOME-PHOTO SERVICE

BOX 88

HUNTINGTON PARK, CALIF

Cameras On the Radio

Contrary to a hard and fast rule of the National Broadcasting Company, which prohibits the use of cameras on its premises, Studio 3B has become the happy hunting ground of candid camera fans on Wednesday nights from 10:30 to 11:00 p. m., E. S. T.

Through special arrangements with the powers that be, an exclusive privilege has been granted studio guests who attend the broadcast of "Adventures in Photography," presented over the NBC-Blue Network from this studio. They, and they alone, are permitted to bring their cameras and use them during the broadcast. Even special lighting has been arranged for their convenience.

The hunting is particularly good, for many notables are to be found in the audience each week, and some prominent person who follows photography as a hobby is featured during the popular "quiz" portion of the program.

News travels fast among camera fans, and word that studio shots can be snapped during "Adventures in Photography" has caused the weekly demand for admission tickets to this program to jump to several times the capacity of the studio.



Phyllis Creore and Del Courtney at the mike during "Adventures in Photography" broadcast on Wednesday over the NBC-Blue Network at 10:30 p. m. E. S. T.

Sun Ray Tilt Top

An all chrome pan tilt top (\$3.25), announced by the Sun Ray Photo Company, 295 Lafayette Street, New York, has a special pan feature and an up-and-down tilt controlled by non-slip extension handle which locks the unit. Available at your dealers.

5-Section Tripod

The Sun Ray Photo Company, of 295 Lafayette Street, New York, announces a new sturdy 5-section brass, tubular, telescoping tripod (\$4.50). The four lower sections are of fine milled brass with a spring catch to support each extension. The top section is finished in polished baked black enamel. The section is of solid machined brass, chrome plated. The tripod folds to 15 inches and extends to 5 feet. On sale at all dealers.

Foot Switch

A foot switch made under the patents granted and pending of Lee Engineering Research Corporation, is being marketed by Irving I. Aaron and Associates, Milwaukee, Wisconsin. This switch may be used for enlargers, spot lights, printers, etc.

Slightly larger and thicker than a pocket watch, the switch may be used on either side. It consists of a three inch plated die-cast metal case with a two inch center of moulded bakelite. A slight pressure on this center makes the contact. Electrical capacity is 1000 watts, 10 amps. at 110 volts.

Developix

The "Foto-Eye" printer, used by Developix of New York City makes contact prints of a complete 35mm. roll in one continuous strip. These can be cut apart and filed under their proper headings in a scrap book with detailed information concerning subject, number of roll and frame, and complete exposure data.

More information, price lists, and mailing bags may be obtained by writing Developix, Flatiron Bldg., New York City.

Packard Contest Winner



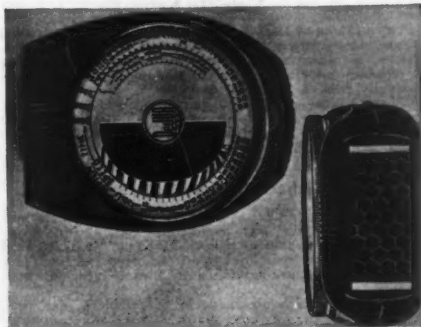
First prize, a Packard One-Ten convertible coupe, was awarded William Langdon, Park Ridge, Chicago, for the above photograph.

Second prize, \$250 in cash, went to Arthur Frederickson, 5206 South Fairfield Avenue, Chicago. James Zdenek, 163 Lawton Road, Riverside, Ill., won third prize, \$100. Winners of \$25 cash prizes were: Warren J. Peters, John Martin, Howard Wolf and Clayton S. Hunt.

Fink-Rosellie Cut-Film-Pack Tank

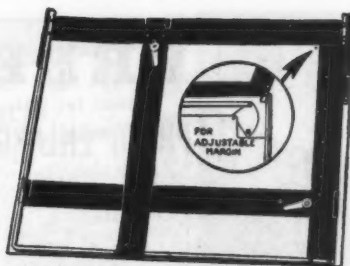
Fink-Rosellie announce a change in price on the F-R Cut-Film-Pack Developing Tank. Heretofore, the tank was sold at a list price of \$9.95. The new list price will be \$5.95.

DeJur Exposure Meter



The new DeJur "Critic" Model 40 Exposure Meter (\$18.75) is calibrated from 1/2 foot candle to 2000 foot candles. The case is constructed from one-piece plastic, and is sealed for protection from humidity and other adverse weather conditions. The film speed ratings are from .3 to 800. The shutter speeds range from 60 seconds to 1/2000th of a second.

The meter can be used for black-and-white or full color, still or moving picture work, indoors or outdoors. Source: The DeJur-Amsco Corporation, Shelton, Connecticut.



New Bee Bee 11x14" ALL-METAL ENLARGING EASEL

THIS newly improved darkroom aid has unique locking devices that hold the arms firmly in place and at right angles from the frame. Another feature is an adjustable paper margin guide that automatically keeps the margins even as they are adjusted and sets both margins simultaneously. The arms are of thin but strong black-enameled steel. They lie perfectly flat and hold the paper on a flat plane. The scales on the sides are shown in quarter-inches, from 11" on one side to 14" on the other. The base is of steel, covered with baked white enamel. Easily kept clean.

Priced at only **\$4.75**

BURLEIGH BROOKS

INCORPORATED

127 WEST 42ND STREET NEW YORK

COLOR PRINTS

from color transparencies, made by the wash-off imbibition method, color corrected.

4x 5—\$ 3.75 ea., lots of 6 prints \$ 6.00
5x 7— 5.00 ea., " " 6 prints 10.00
8x10— 7.50 ea., " " 6 prints 15.00
11x14— 15.00extra prints 4.00

We are making a fine quality print, brilliant in color, semi-matte finish, salon mounted. Delivery ten days. Send cash with order or we ship C. O. D. Transparencies insured against loss. Satisfaction Guaranteed.

Discount to Dealers

NATURAL COLOR CORP.

324 N. Michigan Ave., Dept. M., Chicago, Ill.

SUPERB SALON QUALITY ENLARGEMENTS

Brilliant salon quality enlargements on selected double-weight matt paper.
11x14—2 for \$1 3 1/2 x 4 1/2 from 4c
8x10—4 for 35mm., etc. 6c
5x 7—6 for 4 1/2 x 4 1/2 from
4x 6—10 for sq. negatives
From same or different negatives.

Superior fine-grain developing. 25c
Any size miniature roll.

RELOADS Any 35mm Eastman Film. 40c
Agfa or Du Pont Superior
SUPER XX AND PANATOMIC—6c

NATIONAL PHOTO LABORATORIES
88 West 42nd Street Dept. NA New York, N. Y.



FREE!

Send for this

PHOTO ENLARGER

for a two weeks' free trial in your own home. See how easily it makes beautiful ENLARGEMENTS; how it COPIES pictures; how it REDUCES and RETOUCHES. See its MONEY MAKING possibilities. Price only \$9.85,

complete with FIVE different focal length lenses, 1/6.3 ANASTIGMAT. Takes all size negatives up to 4x5 inches. FREE CIRCULAR.

GRAPHOMAT CORP., 152 W. 23rd St., N. Y.

35mm.
ROLLS

DEVELOPED FREE

Pay only for what you get. Maximum charge \$1.00. Our rate is 4c per print. If less than 25 negatives are good, we issue 4c credit per print. Enlarged to 3 1/4 x 4 1/4, with Photo-Electric Eye, Velox paper only. High class work guaranteed. D.K.20 Fine Grain Developing. In today—out tomorrow. SAVE MONEY. Send roll and \$1.00 today. (Or sent C.O.D. plus postage.)

MINIPIX LABORATORIES

P. O. Box 1144

Dept. 32

CHICAGO

SPEED-O-COPY

For Better Pictures

The scientifically designed precision-built, ground glass focusing attachment for LEICA or CONTAX cameras. SPEED-O-COPY permits CRITICAL FOCUSING, assuring of FINE DETAIL AND COMPOSITION in all photographic work, either black and white or color.

For the LEICA \$28.50
For the CONTAX 31.50

Available at all leading photographic dealers.

Write for illustrated literature.

D. PAUL SHULL

240 S. Union Ave., Dept. M2
LOS ANGELES, CALIFORNIA



Now send for this
FREE Camera Catalog



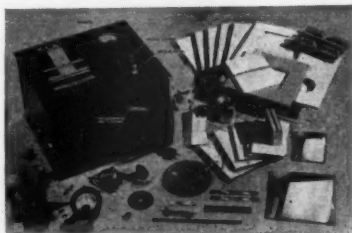
Find out how much you can actually save on cameras, accessories and supplies. Discover the completeness of this great camera catalog. Here is everything in photography at your finger tips. Quality guaranteed. Send for your copy of the catalog that outvalues them all. It's FREE! Just mail a postcard TODAY!

LAFAYETTE CAMERA

Dept. 478—100 Sixth Ave., New York, N. Y.

Curtis Color Printer

The 4x5 Model K Color Printer (\$50 factory assembled) can be obtained in kit form ready for home assembly for \$16.50. Duplicate color prints can be made for practically the cost of black and white prints with this printer and the simplified Orthotone Process.



The complete story of this technique is contained in the latest Curtis book, "Color Printing Simplified," copy of which may be obtained by sending 25 cents to the Thomas S. Curtis Laboratories, 2063 East Gage Ave., Huntington Park, California.

Speedo Print Dryer

The new Speedo Print Dryer (\$14.85) dries glossy prints simultaneously with matte and semi-matte prints. It operates with an electrically driven warm air blower system powered with a Grade "A" Alliance motor, using alternating current only. It scientifically dries prints by employing all three methods of heat transmission—radiation, conduction, and convection. Provides over six square feet of drying surface. Raygram Corporation, 425 Fourth Avenue, New York City, is the eastern distributor.

Colortone Process

The Colortone Process Company announces a radically new process for multi-coloring pictures from black and white prints.

Essentially it is a toning process by which various colors may be obtained by brush application of Colortone on a specially prepared bromide print. Prints may be multi-colored at an average cost of less than 10c per print. The complete kit sells for \$5.00. For further information write Colortone Process Incorporated, 315 Venice Boulevard, Los Angeles, California.

Time-O-Lite

The Time-O-Lite, manufactured by the Industrial Timer Corporation, 101 Edison Place, Newark, New Jersey, is automatic. There are no springs to reset or rewind, no clock to watch, no monotonous counting—simply push a button.

Time-O-Lite can be plugged into any A/C current outlet for immediate use. Sold at all dealers. Model M-39 maximum load 750 watts, \$12.50, Model P-39 maximum load 1500 watts, \$17.50.

Besbee Plaston Title Set

Besbee Products Corp., Trenton, N. J., announce new PLASTON letters and characters (\$5.50) for professional-looking movie titles. Made of a new kind of plastic, that will not chip or break, PLASTON letters are pressure-molded into clean, clear-cut outlines.

The letters which are made in white, black, and red, may be placed on any matte black, white, photographic or colored background.

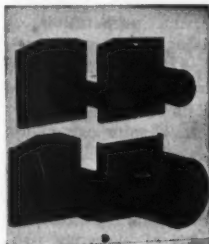
Home Reversal Developer

Graphichem reversal processing powders are compounded for amateur use in the reversing of 8 mm. and 16 mm. motion picture film. Full directions come with each set of powders. They may be used for reversing both movie and still Dufaycolor film.

Source: Superior Bulk Film Co., 188 West Randolph St., Chicago, Ill.

Accessories For Light Control

"Snoots" (\$7.00 per set of 4) have been designed to confine light to the desired place and to keep stray light from the lens or background. These (Fig. D) take the place of "gobos" or pasteboard light shields.



Space is provided between light lens and "Snoot" for inserting one or more diffusers if desired. They are manufactured in sets of four with 2", 3", 4", and 5" openings and are made of 22 gauge steel with inside finish dead black enamel and exterior in gray wrinkled enamel.

"Barn Doors" (\$5.00) (Fig. E) can be used to cut light at any angle desired. They rotate around the light or fold flat when not in use. Space is provided for diffusers. Made of 22 gauge steel, these barn doors are finished inside with dead black enamel. The exterior finish is gray wrinkled enamel.

Source: Bardwell & McAlister, Inc., Hollywood, Calif.

\$\$\$ From Photography

The "Gloss-Tone" advertising post card produced inexpensively by the Fort Wayne Printing Company of Fort Wayne, Indiana, opens up a new way of making money for the amateur photographer. Every business concern is a prospect. Tourist camps and filling stations are especially interested in this type of advertising. In fact, every retailer and wholesaler will see ways of using the Gloss-Tone cards.

The photographer not only makes money from the sale of the necessary photographs but he also makes a commission on the sale of the cards without any investment. The company executes the order and sends it out C. O. D. paying the commission to the salesman direct.

Write for more details to the Fort Wayne Printing Co., Fort Wayne, Ind.

New Tri-purpose Projector Announced

The Society for Visual Education, Inc. has announced a 150-watt projector (Model DD) taking 2 x 2" Kodachrome or Dufaycolor slides and 35mm film strips, either single frame or double frame. This model incorporates the following features: Semi-automatic slide changer; positive film movement control; combination aperture masks for changing quickly from single to double frame pictures or vice versa; and the S. V. E. rewind take-up which rewinds the film as it is being shown and inserts it into a can in the proper sequence for the next showing.

New Moving Picture

Son of the Sheik, starring Rudolph Valentino and Vilma Banky has been released by Nu-Art Films, Inc., in 16mm. sound-on-film and silent film for amateur cine enthusiasts.

Book Reviews

PHOTOGRAPHY, ITS PRINCIPLE AND PRACTICE, Third Edition, by C. B. Neblette, F.R.P.S. 590 pages, numerous illustrations and diagrams, indexed. *D. van Nostrand Company, Inc.*, \$6.50.

The complete descriptions and full directions for every photographic method and process are made especially useful and available by a wealth of supplementary information.

Real Economy!

WONDERLITE photolamps provide brighter light, hours longer than ordinary photofloods. They give genuine satisfaction from both a price and performance standpoint. Insist on Wonderlite Lamps next time you buy.

(No. 1) FIVE HOUR LAMPS
Picture Flood...35c Filter Flood...50c Green...75c

(No. 2) TEN HOUR LAMPS
Picture Flood...65c Filter Flood...90c Green...\$1.00

WRITE FOR COMPLETE PRICE LIST.

WONDERLITE COMPANY
14-M Northfield Avenue, West Orange, N. J.

SAVE With WHOLESALE'S AMAZING PRICES

- Leica Model G, F:2 lens with case, LIKE NEW \$115.00
- Contax 3, F:1.5 lens with case, LIKE NEW 175.00
- Autoflex Reflex Camera, F:2.9 Compur rapid shutter anastigmat lens..... 50.50
- Canvas Carry All Case holds all type cameras and accessories..... 3.50
- DeLuxe Elk Leather Carry All Case..... 6.00
- Argus C2 or 3 camera case, NEW..... 3.00
- Kodak Duo No. 620, 3.5 lens, compur rapid shutter with case, USED..... 35.00

Complete line of cameras, camera cases, projectors and all photographic items of all types and styles at wholesale prices.

Send for FREE bargain list.

WHOLESALE CAMERA SUPPLY CO.
29 W. 34th Street Dept. S-5 New York, N. Y.



Super ELECTROPHOT EXPOSURE METER

Highly sensitive; easy to read; Universal use; Movies, Stills; All Films: Black and White, Colored; All Shutter Speeds; Indoors, Outdoors; All Film Speeds in popular ratings; All-American materials and manufacture. Amazing new low price! See it at your dealer's. **\$14.50**

Write for free folder!.....
J. THOS. RHAMSTINE* 207 Beaubien Street
DETROIT, MICHIGAN

For **FLASH** shots use a **GOODSPEED** **SYNCHRONIZER**



Simple, practical, compact—easy to operate. Fits all popular make cameras. Put it on your camera and adjust it yourself in a few moments. Complete with synchronizer, reflector, batteries, suede leather carrying case, \$13.50. Send for literature.

GOODSPEED-Inc. 220 Fifth Avenue
New York, Dept. 62

BETTER PHOTO FINISHERS OFFER YOU

VAPORATE

Permanent Protection
Against CLIMATE, WEAR, SCRATCHES, OIL, DIRT,
WATER and FINGERMARKS
VAPORATE CO., Inc., 130 W. 46 St., New York

35MM FILMS DEVELOPED & ENLARGED ONLY \$1.00

Wrap a dollar bill around your 36-exposure roll and let us show you a really good job of fine grain developing, with each good exposure enlarged to 3 1/2 x 4 1/2. All for only \$1.00. Regular 6 or 8 exposure films with 2 enlargements **25c**

Send for Free Mailing Bags.
UNIVERSAL PHOTO SERVICE Box 612-B, La Crosse, Wis.

MOGULL'S

at
Radio
City
67 West 48th Street
New York, N. Y.

1500 Photo-Cine ITEMS

Mogull's **BARGAINERS**, the book to go by, when you go to buy! Time and Money savers in every department. Illustrated. A POST CARD BRINGS YOURS! What do you need? Trades. Terms. Film rental library (sound, silent).

EXCLUSIVE ITEMS

NO-HEAT GLASS

Protects negatives from heat in Enlarger or Projector at.....35c up

DESENSIT

DESENSITIZES Fastest Film. Develops in bright light.....60c

At your dealer or direct

LYNHOFF LABORATORIES

BOX 443-M

ROCHESTER, N. Y.

QUICK SHIPMENTS

35mm FILM

PROMPT SERVICE

25 Ft. Agfa Ultra Speed.....	\$1.00
25 Ft. Agfa Supreme.....	1.00
25 Ft. Eastman Plus X.....	1.00
25 Ft. Eastman Super X.....	1.00
25 Ft. DuPont Superior.....	1.00
Daylight Film Winder (was \$10).....	2.95

Postpaid in USA if Cash with Order.

ASK FOR FREE BULLETIN No. 7

Greensburg Photo Supply Co.

No. 7 Fisher Bldg.,

Greensburg, Pa.

Simple diagrams and vivid photographs make clear the arrangement of lens systems, and the chemical properties of sensitizing dyes, and many other scientific fundamentals. Complete formulas are given for the preparation of emulsions, developers, fixing baths, reducers, intensifiers and toners. A complete Bibliography puts at your instant command the entire world literature on photography—so that you can instantly find a reference giving complete particulars about any specialized subject in which you are particularly interested. Carefully chosen photographs clarify the author's directions for obtaining the best results in all practical aspects of everyday photography.

PICTORIAL JOURNALISM, by Laura Vitray, John Mills Jr. and Roscoe Ellard. 437 pages, 30 illustrations, 14 diagrams. Indexed. McGraw-Hill Book Company, \$4.00.

Unique in that it applies the principles of graphic design to the planning of newspaper pages, this book gives a comprehensive treatment of the basic knowledge involved in the various skills required; photography, picture editing, photo engraving, and picture layout. It gives the free lance photographer an understanding of newspaper problems which will make his work more acceptable to editors.



"He says ever since he was a boy he's been afraid of the dark!"

KAMERA KWIZ

(Continued from page 78)

10. A great amount of emphasis is placed on a thorough, final wash. Why?

A. Chemicals left in film or paper will cause stains later.

B. Prolonged immersion in cool water hardens the film.

C. A long wash insures the removal of the anti-halation backing.

11. If you underexpose an enlargement on bromide paper and try to force development over an excessively long period, it will finally:

A. Bleach

B. Blister

C. Fog

D. Reverse.

12. Which of the following men were not in on the ground floor of photography?

Talbot

Franklin

Voltaire

Newton

Niepece

Van Dyke

Answers to

KAMERA KWIZ

1. Manual manipulation produces more agitation in a tray.

2. (C). When films are not properly spaced during processing, fresh developer may be prevented from reaching certain areas.

3. (A). Since the finest of fine grain formulas cannot reduce an already coarse grain, it would be best to use a fine-grain film and careful processing in ordinary developer.

4. Smoke, drifting between the lens and paper may cause slight diffusion when making enlargements.

5. (B). Although it is safer to wait for (C) until the film or paper is immersed in the Hypo.

6. Solutions siphoned in the following order would not be contaminated for photographic use:

D. 1. Developer

2. Short stop

3. Hypo

7. Mercuric Chloride and Corrosive Sublimite are the same.

8. A. False. Overexposure increases density but decreases contrast.

B. A glossy print may be soaked and ferrotyped at any time.

C. True. Kodachrome transparencies are positive images and would naturally print as negatives.

D. True. You would simply have twice as much solution.

9. It was partially submerged when immersed, so that part of the print received no development.

DeJUR 5A PHOTO-ELECTRIC EXPOSURE METER

\$1150 With Sling

(Pigskin Carrying Case, \$1.00)

Precision made . . . ultra sensitive . . . zero adjuster . . . for black-and-white or color . . . still or movie . . . indoor or outdoor . . . day or night.

At your dealer, or write for complete information.
Made in America for all the world.

DeJure-Auto Corporation

Save on quality
35 mm DEVELOPING
and ENLARGING

36. ^{1/2} IN.

Any 6 or 8 exposure roll film DEVELOPED and individual Panel Prints delivered in loose-leaf leatherette album.

Send name (no stamps) \$25c (plus order, 25c)

The finest photo service of its kind at any price! Automatic "electric eye" insures perfect exposure. Each good exposure enlarged to 3 1/2 x 5 Panel Print. Delivered post-paid in a LEATHERETTE LOOSE-LEAF ALBUM. Mail your roll with \$1—QUICK SERVICE.

\$25c

PHOTO LAB. INC.

3825 Georgia Ave., N. W.
Room 230, Washington, D. C.

35 MM. NEGATIVE USERS!

"Reload Your Own"

EASTMAN — AGFA — DUPONT

25 FEET for \$1.00 POSTPAID Immediate Delivery

RELOADED CARTRIDGES—36 Exposures—3 for \$1.00

PACIFIC COAST FILM CO.

1810 NO. SIERRA BONITA HOLLYWOOD, CALIFORNIA

BETTER AND BIGGER VALUES

National Graflex II, F3.5,	\$ 46.50
Super Ikonta "C" Special, F2.8,	57.50
Automatic Rolleiiflex, Zeiss Tessar F2.8,	105.00
Contax III, Sonnar F1.8, everybody calls,	169.50
Super Ikonta B, latest model, Z Tessar F2.8,	102.50
Speed Graphic 3 1/4 x 4 1/4, CZ Tessar F2.8, range-finder and flash,	117.50
Leica IIIfb, brand new, with like New Summar F2,	137.50
Brand New Omega 8, 2 1/4 x 2 1/4, F4.5, Lens,	49.50

Write us for your needs today.
TERMS 10-Day Guarantee on All Merchandise. TRADES
TOWER PHOTO SHOP 24 W. 43rd St., New York City

New
P & H
ITEMS

INSTANTONER

Instant prints a beautiful sight. Requires no preparation. Developing in 10 seconds. Simply apply instant toner to both film and prints. Prints develop in water and dry in 10 seconds.

P & H FILMGARD

A combined developer, fixer, and film preservative. For most negative processing, prints from high marks and scratches. 100 cc. bottle \$1.00.

KIMIKAI RETOUCH KIT

A simple and scientific method for local retouching of prints or negatives. To improve shadow detail and increase contrast. Acting as a mild and sure fixer, enlarger, and toner. 100 cc. bottle \$1.75.

P & H DEVELOPING PROCESS

Corrects faulty exposure. Increases shadow detail. Brings out highlights. Reduces halos. Improves balance. Not just another chemical developer, but a basically different theory and mechanical method. Units \$2.50 and up.

Write for folder

P & H CORPORATION
7000 ROMAINE STREET
HOLLYWOOD, CALIF.

35mm. CAMERA USERS

"LOAD YOUR OWN FILM"

Guaranteed Negative. Stock Up Now!!

Eastman SUPER X
Eastman PLUS X
Eastman SUPER XX
Eastman PANATOMIC X
Dupont SUPERIOR
Agfa ULTRA SPEED

25 ft. \$1.00
or
100 ft. \$3.75

These prices include Postage Paid U. S. A.
Specify Type of Film and Quantity Desired.

CAMERA EQUIPMENT CO.

1602 BROADWAY

NEW YORK CITY

Use BULK 35 mm FILM. Write for bulletin
describing DAYLIGHT Cartridge Loaders.

W. W. BOES CO.

3001 Salem Ave. Box 5 Dayton, Ohio.

GUARANTEED—To read lower
fowlight and higher highlight
intensities more accurately than any
other meter....regardless of price.

PHAOSTRON

ELECTRIC EXPOSURE METER

For Stills or Movies

Ask your dealer...or write:

PHAOSTRON CO. • ALHAMBRA, CALIF.

ONLY \$5

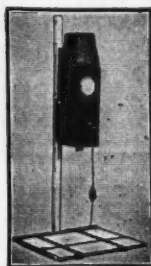


PHOTO ENLARGER \$5.94

including an f5 LENS. Takes all
size negatives up to 4x5 inches. EN-
LARGER COPIES and REDUCES
automatically. Does perfect work.
Also with an f6.3, 3 1/4 inch f1.
ANASTIGMAT LENS for only
\$7.94. Money back guarantee. In-
teresting circular FREE.

IDEAL-M

152 West 23rd Street, New York

35MM FILM FineGrain
DEVELOPED & ENLARGED

\$1-

Any 36-exposure roll of film fine-grain processed and each good
negative enlarged to approximately 3"x4" on single weight
glass paper for only \$1. On double weight mat paper, \$1.50.
For your convenience, you may wrap a dollar bill around your
roll of film or request it sent C.O.D. Mail today. Film booklet
free! Here is a book that will help you make better pictures.
Send in your request with your order, or mail
a postcard.



Gratifying Service Since 1920

RAY'S PHOTO SERVICE

701 Ray Bldg., LaCrosse, Wisconsin

10. Chemicals, especially hypo, if left in
paper or film, will react later, causing stain
and discoloration.

11. Too long an immersion in developer will
cause bromide to fog.

12. Neither Franklin, Voltaire, Newton nor
Van Dyke were associated with the early
development of photography.

?? QUESTIONS ??

to the Editor

Q. In building my own enlarger, what height
should I make it and over what range should
the lens be adjustable?

Ans. These distances depend on the focal
length of the lens used. For 35mm. negatives,
use a two inch lens (50 mm.). Distance from
paper to enlarger lens should be adjustable from
about 8 inches to 22 inches. Distance from
lens to negative should be adjustable from about
2 1/2 inches to 2 3/4 inches. This will permit
making enlargements of from three to 10 times.

For negatives up to 2 1/2 by 2 1/2 inches in
size, use a three inch enlarging lens (75mm.).
Distance from paper to lens should be adjusta-
ble from 9" to 27". Distance from lens to nega-
tive, from 3 3/8" to 4 1/2". This will permit
enlargements of from two to eight diameters.

To check, mark a piece of discarded negative
with two scratch lines exactly one inch apart.
Project this negative in the enlarger and mea-
sure the image distance between the scratches.
If it is 5 inches, for example, then the en-
larger is set for a 5-times or 5 diameter en-
largement.

Q. How much should exposure be increased
for closeups with double-extension bellows or
when using a lens extension tube?

Ans. Doubling the bellows extension reduces
the effective aperture one-fourth. This means
that exposure must be increased four times (two
stops).

For example, a 3-inch lens set at f8 is ex-
tended until the distance from the film plane
to center of lens is 6 inches. The effective
aperture then is f16.

This 3-inch lens at f8 extended to 4 1/2
inches has an effective aperture of f11.

The effective aperture of any lens is equal to
the focal distance from film plane to center of
lens, divided by the diameter of the iris in
inches.

1. A low
er's mag
may be
amine
fr

Edi
undistu
and no
pair of
between
the bot
splicer
hold th
splicer
cement
the edi
The
The vie



2. Scenes
numbered
cartoons or
can be sub

Edit your films

By **WILLIAM L. MORGAN**
Illustrated by the Author



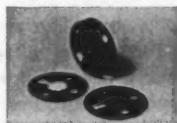
1. A loupe or jeweler's magnifying glass may be used to examine individual frames.

WHEN films are returned from the processing lab, they are seldom ready for showing. Scenes must be cut out; some must be shortened; others rearranged to give proper sequence. This process of editing is as important as the actual shooting of the scenes, for it is by editing that films are given continuity and meaning. Showing your movies "in the rough" with no attempt at refinement or polishing would brand your movie-making efforts as the worst kind of amateurishness.

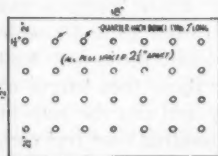
The equipment used for editing may be as simple or as elaborate as your desires and pocketbook dictate. You could edit with your projector and a film splicer, though it would be a tedious process.

Editing should be done, if possible, on a table in some undisturbed corner which can be used for film editing and nothing else. On this table should be mounted a pair of geared rewinds about thirty inches apart. Midway between the rewinds the splicer is mounted. A place for the bottle of film cement is provided to the right of the splicer by tacking small wooden blocks to the table to hold the bottle in position. If you buy rewinds and splicer mounted, a recessed hole will be provided for the cement (and water if you need it). A mounted set should be fastened securely to the editing table with a small seat clamp, to insure steadiness when working.

The viewer, if you have one, is mounted directly behind the splicer as in Fig. 5. The viewer is a device that projects a frame of film on a small screen, allowing you to see it in detail and to locate the scene you are looking for. A viewer now on the market projects the action of the film as well as you draw the

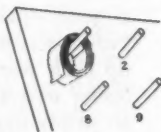


3. A stripping flange is made by removing one side from a 100' reel.



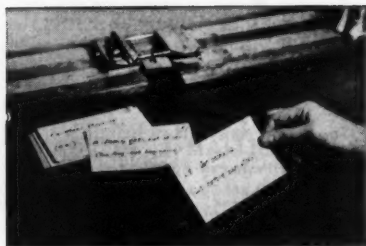
PEG BOARD

2. Scenes are separated and hung on numbered pegs of a peg board. Egg cartons or a quarter size type case can be substituted for the peg board.



HOME MOVIE DEPARTMENT
Cinécam





4. Separate cards are used for each scene placed on the peg board.

film through it. Viewers are a great aid in editing, and for the smaller 8mm film they are particularly desirable.

If your equipment does not include a viewer, a jeweler's magnifying glass (called a "loupe"), Fig. 1, or a thread-count glass, used by clothiers, will help you to examine individual frames more closely and to match action in scenes.

You should also have a stripping flange, which you can make. This is used for winding off lengths of film, a tedious process if done by hand. The stripping flange, Fig. 3, is made from an ordinary 100' reel. Simply remove the side with the round hole. The half-reel remaining is the stripping flange, used on the rewind as any reel. However, to make it easier to slip off the film after it is wound on, it is a good idea to cut the side that was removed so that it will slip completely over the core of the reel. Marks on the reverse side, where it was attached, will guide you in this. This free piece is slipped on the core of the stripping flange before film is wound on it and can then be used to push the roll of film off easily.

You will need some means of keeping the small rolls of film separate and in good order. One solution for this is the peg board. A peg board, Fig. 2, can be made from a piece of plywood about 12x18 inches. Drill quarter-inch holes in it spacing them 2½ inches apart. Two-inch pieces of quarter-

inch dowel are driven into these holes. Each peg should be numbered.

Egg cartons, Fig. 2, will serve the same purpose as the peg board. You can join two or more of these boxes together with paper fasteners, or a quarter-size type case can be used. Be sure each division is large enough. A case used for extra figures and spaces is about what you want.

A de-luxe editing outfit would have a piece of opal glass about 6x8 inches set into the table, flush with the top, and lighted from underneath. This is helpful in watching for scenes during rewinding. A white card, tacked where it reflects considerable light, makes an acceptable substitute.



5. The viewer permits the editor to locate and examine any scene desired.

You should have short lengths of leader on hand, which you can probably cull from discarded films. They should be black. Clear leader is not as good, since it causes an undesirable "white screen" when projected. Roll up each two or three foot length of leader separately and put the rolls in an empty four hundred foot reel can, where they will be available when you want them.

To complete the editing equipment, you will need a pencil and a quantity of 3x5 index cards. As you will use each card once and then throw it away, get your printer to cut you some from a cheap, light stock.

When your films are returned from

the processing laboratory, run them through on the projector several times to familiarize yourself with them. If there are more than a few bad scenes which must be removed entirely (scenes greatly over-exposed or under-exposed, false starts, camera failures, etc.), it is a good plan to make a rough edit before going further. This can be done simply and quickly at your editing table, as the very dark and very light scenes will not be difficult to locate. If you are working with more than one hundred foot rolls, of the same subject, splice them together at this time onto a four hundred foot reel.

Of course, as you remove scenes,



6. After the editing each scene is spliced to the preceding scene.

you will splice the loose ends of the film, remaining on the reels. The ends must be placed on the splicer emulsion (dull) side up. Scrape until the emulsion is removed, but no more. You need just enough cement to cover the scraped surface, and the splicer should be clamped shut immediately after it is applied as in Fig. 6. Avoid using too much cement.

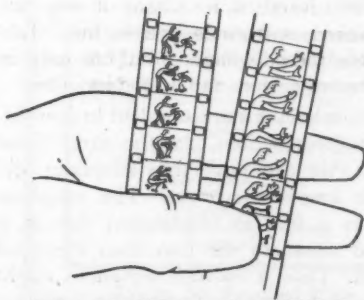
What to do with the bad scenes is a problem, particularly to the beginner, who perhaps secretly longs to show them anyway. Over-exposed shots *can* be intensified, under-exposed shots *can* be reduced (speaking only of black-and-white film),

though the results seldom justify the time and bother, unless the shot is very important to the cine amateur and is irreplaceable.

Returning to the projector with the film, you will run through it this time with a more critical observation of the continuity of scenes and possibilities for its improvement. Make a list of the scenes as the film is being projected, jotting down the few words that will identify each scene in your mind. At the side make a note of any changes you think should be made, such as, "Cut camera unsteadiness at end", "Combine with preceding long shot", "Should follow shot of unloading car", "Cut bad frames", and so forth.

When the alterations you wish to make are fixed in your mind, film and notes are taken back to the editing table. Your editing procedure at this point depends upon the condition of your films. If scenes are pretty much in correct sequence (as they might be, say, in the filming of a motor trip, requiring only shortening and the removal of an occasional repeat scene—you can do the job simply by running the film on the rewinds and making the desired adjustments.

If, however, there are many scenes out of sequence, and particularly if you are trying to build a story continuity not planned (Page 120, please)



7. To cut together two series of identical action find the frames on each where action coincides. Cut both scenes at this point and splice.



Zooming up from a long shot to a closeup is a favorite Hollywood device. The effect can be obtained by changing lenses, from one camera position, using lenses of successively greater focal length.

WHEN working with movie cameras it seems as though we have to be far away from our subject to take ordinary shots, and yet with long shots the image seems too small.

The regular cine lens is, relatively, a long focus lens. A one-inch lens is standard on the 16mm. cameras and one inch is about twice as long as the diagonal of the image on the film. That is long focus because on still cameras the focal length is about equal to the diagonal of the image. Being long focus it then means that if we wish to take a full length or three-quarter shot of a person we must stand farther away than with our still camera. But to get a good sized image of objects over one hundred feet away a one inch lens does not seem long enough. To obtain good sized images of distant objects we must therefore use a telephoto lens.

Cine telephotos are supplied in two different constructions. In the same focal length, we can have true telephoto and simple long focus lenses. The telephoto type is a lens so constructed that it is placed closer to the film than the focal length. Thus a six-inch telephoto might extend only three or four inches from the camera while a simple long focus lens would be placed six inches from the film.



Telephotos are of more complicated construction and therefore cost more. An advantage is that they are not as bulky as long focus lenses, but both types work equally well.

If the photographer has a limited budget he can construct his own long focus lens with a lens from a still camera. His local camera repair shop can thread an extension tube to screw into the lens mount of his camera, and in the other end of the tube is mounted a two or three inch lens taken from a still camera, set so that it is focused on infinity.

Though a variety of long focus lenses is a great help in cine work in 16 mm., the two inch lens is one of the best for all around use. Good pictures can be made with this lens with the camera held in the hand. For longer focal lengths the use of a tripod is a necessity. All camera movement is greatly magnified when using a telephoto lens. To be assured of rock-steady pictures on the screen, use a tripod.

With extremely long focal lengths, it is often necessary to have a separate support for the lens. The large telephotos extend

a
an
onl
Th
a s
thi
WH
tall
see
I
acc
is d
the
cau
V
way
exa
wor
ages
mag
A
shot
stan
cano
is ne
phot
sory

A long
ond-ha
improvi
to the

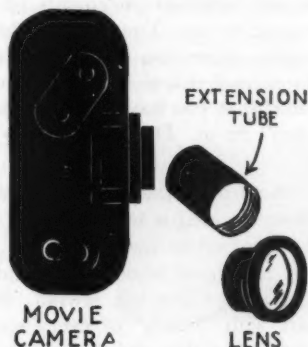
It
first t
design
1905
magn
trodu
are o

a considerable distance from the camera and are very heavy. The weight is held by only the few threads in the lens mount. This is not sufficient. Vibration will cause a strain and may result in stripping the threads and having the lens drop off. When you obtain a large telephoto lens talk over the matter with your dealer and see if it needs a special support.

In addition to a tripod as an essential accessory in telephoto work, a yellow filter is desirable to minimize haze. The longer the telephoto, the greater the diffusion caused by haze in the atmosphere.

When panoraming with a telephoto always keep the object of greatest interest exactly in the center of the finder. When working with these greatly magnified images the slightest movement is greatly magnified.

A telephoto enables you to get sport shots though you are seated far up in the stands, and when it comes to making candid shots of camera-shy subjects there is nothing that takes its place. The telephoto then becomes more than an accessory—it becomes a necessity.



A long focus lens from another camera, or from a second-hand source may be adapted to telephoto use by improvising an extension tube. The distance from the iris to the film, in any camera, is equal to lens focal length.

It is exactly a hundred years since the first telephoto lens, the "Orthoscope," was designed by Petzval; but it was not until 1905 that the first of the modern fixed magnification telephoto objectives was introduced, and the telephotos in use today are of even more recent design.

SPEEDO PRINT DRYER



Better Than Ever

The new approved 1940 Speedo Print Dryer offers the amateur darkroom worker the means of drying glossy prints simultaneously with matte and semi-matte prints. No buckling or curling—prints come out FLAT and SMOOTH. Capacity enough for the small professional shop as well as advanced amateur use. Has a total of over 6 square feet of drying surface, using only 11"x14" of work table space. Operates with an electrically driven warm air blower system—powered with a Grade "A" Alliance motor, using alternating current only.

It scientifically dries prints by employing all three methods of heat transmission—radiation, conduction, and convection. Temperature and drying time are regulated to prevent paper and emulsion from becoming brittle. This sensitive regulation also stops delicate gradations of greys and blacks of the print emulsion from losing tonal value.

\$14⁸⁵
West
of Rockies
\$15.65

ANNOUNCEMENT

Speedo Print Dryers are now being nationally distributed by the following firms:

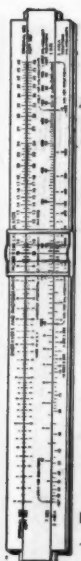
RAYGRAM CORPORATION
New York

Atlantic Seaboard—Maine thru Virginia
HORNSTEIN PHOTO SALES
Chicago and Dallas
Middle West—Southwest
SEEMANN'S, Inc.
Hollywood—San Francisco
Pacific Coast

Write for Free Descriptive Folder.

GENERAL DEVICES CORP., Mfrs.

3125 Lookout Circle, Dept. 42, Cincinnati, Ohio



Now you can figure ENLARGEMENTS and REDUCTIONS INSTANTLY — ACCURATELY with this amazingly simple PHOTOGRAPHER'S CALCULATOR

A handsome 10 inch slide rule made of well-seasoned wood—white composition face permits fine calibrations and easy reading—magnifying indicator of unusual power fits compactly into back of rule for ready reference—packed in neat pocket case with closing flap.
COMPLETE FOR ONLY

50¢ Post Paid

Every Photographer Needs One

Gives dimensions instantly and accurately in enlarging and reducing—percentage of increase and decrease—a valuable help for all MINIFANS who do their own printing. Indispensable for photographers, photo-engravers, photo-finishers, ad copy writers, printers, etc.

Available by Mail Order Through Minicam Exclusively

MADE
IN U.S.A.

For complete outfit, send 50c in coins or U. S. stamps (60c in Canada). Mailed post-paid. Satisfaction guaranteed or money refunded. (Dealers write for quantity prices.)

MINICAM, 22 E. 12th St., Cincinnati, Ohio

Gentlemen: Please send.....Photographer's Calculators.

Name

Address..... City..... State.....

Name of my photo dealer is.....



"BETTER PICTURES" \$1.00

ANY 35MM. ROLL—36 exposures developed and printed to size 3 1/4x5—\$1.00. 18 EXPOSURE ROLL—60c. No. 127 SPLIT CANDID ROLL—16 exposures developed and printed to only 50c.

We use only Fine Grain Developer printed on Kodabrome Paper. Prompt Service. Send roll and money today.

ALL REPRINTS 3c EACH

BETTER PICTURES 2143 Farragut Ave.
Dept. M, Chicago, Ill.

Send 5c stamps or coin to cover mailing charges.

You'll Do Better With

CHAMPLIN **16** **FORMULA**
FINE GRAIN DEVELOPER
CHEMICAL SUPPLY CO.
HOLLYWOOD, CALIFORNIA

Edit Your Films

(Continued from page 117)

at the time of filming, the only way is to separate and remove each scene.

Start winding the film on the stripping flange, and when you come to the end of a scene, cut and remove it, noting which scene it is. Hang the rolled-up scene on the peg board. On a 3x5 index card, Fig. 4, make a note of the subject-matter of the scene, stating also whether it is a long-shot (LS), medium shot (M), or close-up (CU). Make a note also if the scene is to be shortened or bad frames are to be removed, or if two scenes of the same action are to be combined. In the upper right-hand corner of the card write the number of the peg on which the scene was placed.

In order to have heads out on the small rolls of film, work from the end toward the beginning of the reel. Every scene is wound up and placed on a numbered peg, and when you are through, you will have as many index cards as scenes. These cards can be sorted easily into the continuity you tried to visualize as the film was projected. As you sort the cards, other and better arrangements of scenes may occur to you. You may decide to cut a lengthy scene into shorter lengths for use in several places in the film or you may find that you have a few scenes that just don't fit in. Don't hesitate to delete them.

To re-assemble the film, take the scene you have decided is number one (it may be any number on the peg board), splice a short length of leader to it, and wind it on a reel on the left rewind. Be sure to start with "heads" of every scene. If you remember that the top of the frame enters the reel first, you can't go wrong.

Cut and otherwise adjust scenes according to your notes on the cards. In matching action, where a medium or long shot is to change to a close-up, the action continuing, locate the frames in each scene, Fig. 7, where the action is identical. After first checking to see that lengths of each scene are as you want them, cut the scenes. Leave an extra two or three frames

to a
smo
next
catch
to th
W
cord
back
may
shor
wan
Mak
mak
plac
plan
film
in it
as it
for a
few
trans
ing i
cine
close
no o

For
ers o
here's
may b
be an
show
ters
singl
effects.

For
chrom
white
a bla
ground
able,
Kodach
using t
nuity
of the
down
expose
letter i
the an
actually
until a
title is
the lett
view fo

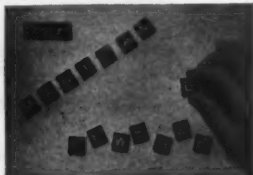
to allow for loss in splicing and to make a smoother transition from one scene to the next, as the eye will take a moment to catch the action blending from one scene to the following one.

When the whole film is put together according to the cards, rewind it and go back to the projector once more. You may see a few scenes that need to be shortened further, and possibly you will want to rearrange your continuity slightly. Make notes of these changes, and also make a note of any abrupt changes of place or action which seem to require explanation—titles are called for here. The film should be complete and explanatory in itself, requiring no running comment as it is being projected. Often the need for a title can be eliminated by shooting a few additional scenes to fill in and act as transition. Even though the original filming is done far from home, the ambitious cine worker can stage a medium shot or close-up with authenticity and a reality no one will doubt, in his own backyard.

Anagrams for Movie Titles

For those movie makers who are poor letterers or who have tired of typewritten titles, here's an unique titling suggestion. Anagrams may be filmed flat or on edge and may even be animated to show moving letters for tricks single frame effects.

For monochrome filming, white letters on a black background are suitable, but with Kodachrome variations may be had through using the red and yellow letters. Human ingenuity can play its part in the arrangement of the block letters which may be filmed lying down or standing on edge. For a trick effect, expose a single frame of film as each new letter is placed in position. When projected, the animation sequence will show the title actually spelling itself out, letter by letter, until all the wording is revealed. If such a title is shot vertically, tilt the board holding the letters and they will slide out of camera view for an unique "wipe."—O. SPRUNGMAN.



PROVE IT TO YOURSELF!

Write for your free 5" x 7" Sample of the **BRITELITE-TRUVISION WIDE ANGLE SCREEN FABRIC** and **Reflection Test Chart**.

Whether you like a Box or Tripod Model, we challenge you to find any other **SCREEN** which will give equal projection quality at all angles, sharper definition, No glare, no distortion. Best for black and white or color. **NO GREATER COST!**



Dept. M-2 Made in U. S. A.

MOTION PICTURE SCREENS & ACCESSORIES CO., INC.
351 West 52nd Street New York City

Enter MINICAM'S Contest \$200 in Prizes

See page 31 in this issue

MOVIE OUTFIT BARGAIN

For Sale By Private Party

Save \$109.00 on this NEW 16mm. outfit. Including Magazine Cine Kodak F1.9 lens and leather case; Kodascope projector latest model "G" with case, F1.6 lens, 500 watt and 750 watt bulbs; Weston light meter; Two 400 foot reels and cans; Kodascope movie viewer; Kodascope rapid rewind and universal splice; Silvered screen. This is new equipment and complete, nothing else to buy. Cost \$349.50—Sell for \$240.00.
L. D. LEACH, 1406 W. Lake, Minneapolis, Minn.

SHOOT THE WHOLE FAMILY! HOME MOVIES—Only 10¢ a Day



Nationally Advertised! 10-Day Trial! Entertain with real movies of children, sporting events, trips, etc. Latest model Movie Cameras and Projectors, 8mm and 16mm sizes. For homes, business, churches, schools and clubs. All accessories. Satisfied Customers throughout the World. **SEND BACK 10-DAY TRIAL on all Cameras and Projectors. SMALL DOWN PAYMENT. Balance AS LOW AS 10¢ A DAY.** FREE details, write: **DON ELDER'S HOME MOVIES**, 739 Boylston St., Dept. M-2, Boston, Mass.

8mm BULK FILM 16mm

Fine grain, Semi-ortho, Non-halation Weston 2. For titles or reversals. Lab. packed. Free formulae ea. order. All film guaranteed fresh stock—not re-perforated positive. Write for big bulk film catalog. Calif. buyers include Sales Tax.

Load Your Own and Save Money

400 Ft. Straight 8mm for Univex, Keystone, etc. . . . \$3.50
800 Ft. 8mm in dbl. 8mm width for all dbl. 8mm cameras \$5.00
400 Ft. 16mm \$4.75
SPOOLS: Univex, 5 for \$1.00 Dolbe, 8mm, ea. 40c
50 Ft. 16mm, ea. 40c 100 Ft. 16mm, ea. 40c

HOLLYWOODLAND STUDIOS

"The West's Greatest Film Mail Order House"
SOUTHGATE CALIFORNIA

FOR PROJECTION OR CONTACT

Here Are Your Ideal Papers

Haloid's

HALOBROME

TAKES GUESSWORK OUT OF ENLARGING

Halobrome has every feature of the ideal enlarging paper.

1. EXTRA RICH EMULSION... for best possible reproduction.
2. UNIFORM CONTRAST... dependably maintained from lot to lot.
3. UNIFORM EXPOSURE SPEED... uniformly maintained from lot to lot.
4. UNIFORM TONE VALUE... in various contrasts.
5. WIDE RANGE OF CONTRAST... 4 standard contrasts PLUS extra softer contrast.
6. EXCEPTIONAL EXPOSURE LATITUDE... acceptable prints even when 50% over-exposed or under-exposed.
7. EASY DEVELOPMENT... 45 seconds to 4 minutes in any standard metol-hydroquinone developer.
8. STANDS FORCED DEVELOPMENT WITHOUT FOG.
9. CONTACT QUALITY... uncommon brilliancy and depth.

A test in your own darkroom will prove that, for better enlargements at less cost, it's hard to beat Halobrome's beautifully balanced emulsion.

Haloid's HALO

OUTS CONTACT PRINTING COSTS

Haloid has the qualities practical printers demand. Halo gives easier, simpler manipulation; reduces waste and guesswork to a minimum:

PROPERLY GRADUATED SPEED RELATIONSHIP FROM GRADE TO GRADE.

BLUE BLACK TONE.

FREE DEVELOPMENT.

FLAT LYING STOCK.

FULL GRADATION SCALE.

PURE WHITE STOCK.

MAINTAINS CONTRAST WITH VARIATIONS OF EXPOSURE.

CONTRAST 0 TO 5.

MOST IMPORTANT THE IMAGE FIRST APPEARS IN DEVELOPMENT IN ABOUT THE SAME NUMBER OF SECONDS, REGARDLESS OF EXTREME OVER OR UNDER EXPOSURE.

MAIL COUPON TODAY

The Haloid Co., 334 Haloid St., Rochester, N. Y.

Gentlemen:

Please send me complete information on Halobrome and Halo with prices and discounts.

Name _____

The HALOID COMPANY

Successful Sensitizers For 34 Years

OFFICES

Boston, 14 Milk St.; Chicago, 111 N. Dearborn St.; Detroit, 1441 Grand Ave.; New York, 111 W. 4th St.; Philadelphia, 111 N. 2nd St.; St. Louis, 111 N. 2nd St.; Washington, 111 N. 2nd St.; Texas and Oklahoma, Distributor, Inc., 111 N. 2nd St.; Paul St. Paul, 111 N. 2nd St.

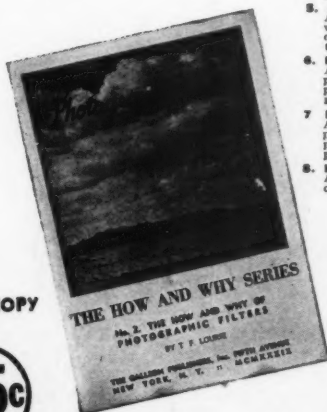
LEARN BETTER PHOTOGRAPHY FROM THE EXPERTS!

THE HOW AND WHY LIBRARY OF NEW PHOTOGRAPHIC BOOKS

The eight handy volumes in this compact series are actually the equivalent of a course in photography, yet each book is complete in itself and may be purchased at the low price of 75c. Each volume contains completely new material, never before printed, the work of an outstanding authority. Although less than a year old, this series has already been accepted by leading photographers, educators and institutions as the standard American series on photographic subjects. Each book is profusely illustrated with new photographs, diagrams, line drawings, tables, etc. Attractively printed on fine quality, coated paper, each book title a different color, rounded corners, decorative end papers, squared backs. The HOW AND WHY SERIES of photographic handbooks will show you the path to improved picture taking, whether your interest be amateur or professional.



- COMPLETELY NEW
- AUTHORITATIVE
- READABLE
- ATTRACTIVE



PER COPY

75c

EIGHT COMPREHENSIVE TITLES NOW READY

1. **How & Why of Fine Grain Development**, by W. R. Timmon
Contains a complete exposition of fine-grain technique and formulae, step-by-step instruction in developing procedure, gamma control, improved negative quality, intensification and reduction, etc.
2. **How & Why of Photographic Filters**, by T. F. Laurie
Second edition within a year. The first, complete, non-technical work on filters for amateur needs. Includes sections on polarizing filters, infra-red, filter factors for all popular films.
3. **How and Why of Photographic Composition**, by E. C. Canby
The first complete volume on this subject, illustrated with actual photographic examples and drawings. Written in simple, readable language, contains over 25 pictorial examples in addition to drawings.
4. **How & Why of Photographic Makeup**, by Maxwell Tourget
The only volume devoted to a consideration of photographic needs in makeup, illustrated with photos and many full-page drawings showing details of makeup for straight photography, character portraiture, corrective makeup. Dozens of individual sketches and many progressive makeup portraits.
5. **How & Why of Selecting and Posing the Model**, by Kenneth Thompson
A non-technical work designed to serve as guidance in working with the human form. Not a book of lighting techniques, but devoted to specific study of variations in the human form. Illustrated with full figure and sectional photos.
6. **How and Why of Trick Effects**, by Arthur Kobbie
A book packed with examples of this always popular photographic pastime. Includes simplified techniques and many effects not previously published. Detailed guidance in trick effects that do not require elaborate apparatus.
7. **How & Why of Better Picture Taking**, by J. Tucker
An introductory work for the amateur who seeks to improve picture quality. Does not deal with negative development or printing, but concentrates on how to get best results in actual picture-taking, working with exposure meters, etc.
8. **How & Why of Enlarging & Darkroom Technique**, by J. V. Neiberger
A practical working manual on the problems of enlarging control, darkroom construction, projection printing. Profusely illustrated.

USE THIS HANDY COUPON TODAY

MINICAM BOOK DEPT.,
22 East 12th St., Cincinnati, Ohio.

Gentlemen:

Send me the following checked titles in the How & Why Series at 75c per copy:

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐ 7. ☐ 8. ☐

Enclosed is \$....., or Send C. O. D. (plus postage).

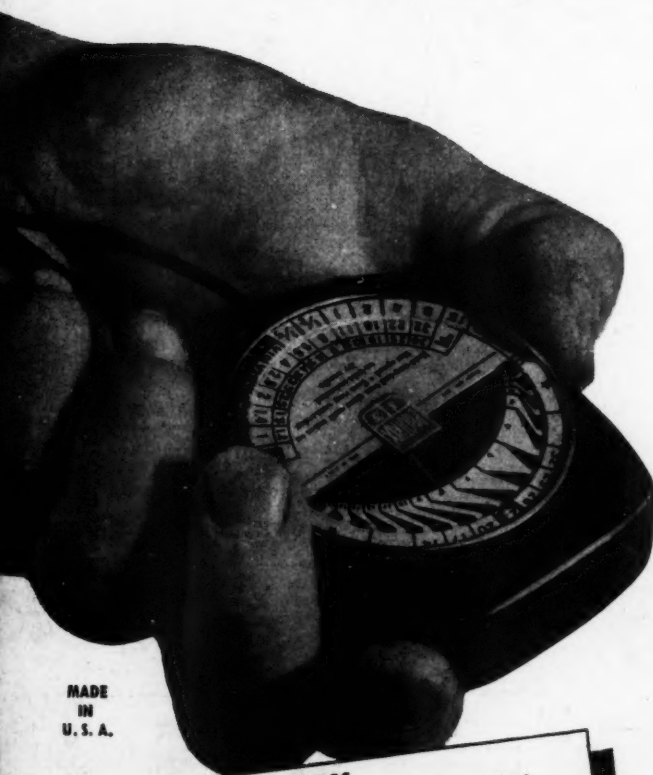
Name.....

Address.....

City, State.....

SENSITIVITY · SIMPLICITY · COMPACTNESS

One exposure meter actually fulfills every basic requirement of modern photography! Photrix SS provides higher sensitivity and easier operation while eliminating bulkiness. Only Photrix SS offers all three:



MADE
IN
U. S. A.

RANGES

Brightness: 1/10 to 3000 candles per square foot
Emulsion speeds: 1.5 to 800 W. and 11 to 38 SCH.
Exposure time: 1/2000 to 60 seconds.
f: stops: f:1 to f:36
Cine camera speeds: 8 to 64 frames per second

One Sensitivity...is to a meter what lens speed is to a camera. It widens your scope... extends your range. Photrix SS gives correct exposure in both dim and glaring light, in extra-critical cases and in everyday work, in color and in black-and-white.

Two Simplicity...means ease of operation...correct readings without distraction from the picture. Reading the Photrix SS is as easy as telling the time. So simple you cannot help operating it correctly the very first time. No light baffles to open and close, no remembering or transferring of figures. All data on one single dial.

Three Compactness...insures personal convenience. Bulkiness does not indicate value in an exposure meter. Photrix SS is light and flat... it slips into any pocket. You'll like its size and feel.

Photrix SS is manufactured by craftsmen with 25 years of experience in precision instrument making. It is rugged and dependable. Built for years of faithful service... \$18.50

PHOTRIX SS

Compare before you buy. See the Photrix SS at your dealers, or write for illustrated booklet to Dept. M-2.

INTERCONTINENTAL MARKETING CORPORATION, 8 West 40th Street, New York



ter-
m-
ad-
tri-
ng-
in-
d-
in-
d-
pe-
de-
th-
to-
er-
se-
er-
e-
is-
h-
y-
l-
e-
n-
e-
r-
g-